

## JOHN W. FERREE, M.D.

### Named New Director of National Society

**J**OHN W. FERREE, M.D., has been appointed executive director of the National Society for the Prevention of Blindness, succeeding Franklin M. Foote, M.D.

Dr. Ferree, former associate medical director of the American Heart Association, assumed his new post on September 14, bringing to it an impressive record of achievement in community health. He is a graduate of the University of Pennsylvania and of Indiana University School of Medicine, and received his degree of Master of Public Health from Johns Hopkins.

After private medical practice in Indiana Dr. Ferree served six years with the Indiana State Board of Health, first as chief of the bureau of local health administration and from 1940 to 1942 as commissioner.

During World War II Dr. Ferree was a commander in the medical department of the U. S. Navy, and was awarded the Commendation Ribbon. He joined the American Heart Association eleven years ago, in charge of community service and educational activities, and for the last two years has been associate medical director. He has played an important role in the development and organization of the Association's state and local programs.

He has also been associated with the American Social Hygiene Association and the National Health Council.



Dr. Ferree is a Fellow of the American Public Health Association, Fellow of the American College of Physicians, Fellow of the American College of Preventive Medicine and Fellow of the New York Academy of Medicine. He is a member of the Medical Society of New York State and of the Medical Society of Westchester County, N. Y. His fraternities are Alpha Omega Alpha, Nu Sigma Nu and Beta Theta Pi. He lives in Pleasantville, N. Y., is married, and has three children.

Announcing Dr. Ferree's appointment, Dr. Ira V. Hiscock, National Society president, said:

"I know that the National Society's contribution to medical science and to the nation will continue and will be increasingly recognized under Dr. Ferree's leadership."

## Franklin M. Foote, M. D., Becomes Connecticut Health Commissioner

ON LEAVING the National Society after thirteen years of untiring and devoted service to the cause of blindness prevention, Dr. Franklin M. Foote has accepted a challenging post. As commissioner of the Connecticut State Department of Health he will be in charge of a recently expanded program which involves wide responsibility. This includes administration of four state chronic disease hospitals and two state institutions for the seriously mentally retarded as well as coordination of the state health program with these previously independent agencies.

The nationwide movement to prevent blindness has made great progress during Dr. Foote's years with the National Society. Among the important advances have been expansion of the research grant program; participation with the U. S. Children's Bureau and Washington University in the school vision screening research in St. Louis, 1948-1954; and cooperation with the U. S. Public Health Service Institute of Neurological Diseases and Blindness in the 18-hospital study which helped to prove that excessive use of oxygen caused retrolental fibroplasia in premature babies. Also, growth of the Wise Owl Club industrial eye safety incentive plan; initiation of preschool vision testing projects in 32 areas; general acceptance of the idea of case-finding surveys for early detection of glaucoma; and formation of Society affiliates in 34 states.

As editor-in-chief of *Sight-Saving Review* Dr. Foote made another outstanding contribution to this program



and to general education in eye health and safety.

At a recent meeting the Society's board of directors expressed sincere appreciation for Dr. Foote's able leadership, and though accepting his resignation with regret, offered warm congratulations on his new appointment. Those on the staff who have worked with him over the years join in wishing him success and happiness.

### 1960 NSPB CONFERENCE

Denver, Colorado will be the scene of the Annual Conference of the National Society for the Prevention of Blindness, to be held March 30-April 1, 1960 with headquarters in the Brown Palace Hotel.

The Colorado Chapter of the National Society, which has developed an outstanding program in recent years, will be host to the conference. An interesting program of discussions, demonstrations and exhibits is planned.

# VALUE OF CONTACT LENSES

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A greatly increased demand for these lenses has followed the introduction of the corneal type, and the refinements in fitting technique.\*

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**T**HERE are in use today two types of contact lenses: the large or scleral type and the small or corneal type. The scleral type has two portions, the outermost flat curve which rests over the sclera or white portion of the eye, and a central dome-shaped portion which covers the cornea. The corneal type is a simple curved lens, smaller than a dime.

When contact lenses were first used nearly eighty years ago they were made of glass which was first blown and then ground to approximate the curves of the eye. These lenses were seldom satisfactory because of their weight and uncomfortable fit.

Late in the 1930's the technique of taking an impression of the eye and making molded scleral lenses, first of glass and then of plastic, was perfected. Until 1947 all these larger lenses required the use of special fluid in the space between the lens and the eye. Then it was found that by placing a hole and channel in the flat portion of the lens the normal tear fluid would circulate and fill this space. This innovation immediately resulted in a higher degree of success for the scleral

lens—now termed the solutionless scleral lens.

The smaller corneal lens is quite new. Although there are reports that such lenses were made of glass many years ago, none was satisfactory. The plastic corneal lens, so popular today, was first used in 1950. It is about one-third of an inch in diameter, less than one-hundredth-inch thick and is precision ground to fit the cornea. It remains in the eye purely by capillary attraction to the tear film which covers the cornea. More than 90 per cent of contact lenses in use today are of this type.

## Indications for Use

There are essentially three groups of patients who are benefited by the use of contact lenses: those presenting medical problems of an optical nature; those in certain occupations where the wearing of spectacles is not feasible; and an ever-increasing group which finds spectacle wearing cosmetically objectionable.

The patients in the first group generally fit into two categories: the cornea of one or both eyes may be scarred or irregular in curvature; or the two eyes may be markedly different in their refractive nature, resulting in a much larger image before

\* Presented at the Annual Conference of the National Society for the Prevention of Blindness; New York, February 26, 1959.

one eye when spectacles are worn. In the first category the tear film or liquid lens fills in all the irregularities and optically restores the cornea to an even focusing surface, permitting the eye to see a clear image. This is the way in which irregular astigmatism and keratoconus are corrected.

In the second category, where the eyes are markedly different, the patient sees two images of unequal size when wearing spectacles. This commonly occurs when a cataract is removed from one eye and the patient still has useful vision in the unoperated eye. The contact lens, by correcting the vision in the operated eye with only slightly increased magnification, enables many of these patients to use both eyes together. Also in this category are patients who are nearsighted in one eye and farsighted in the other. Spectacles produce a smaller image in the nearsighted eye and an enlarged image in the farsighted one, and for this reason are often not tolerated. Contact lenses have the reverse effect, resulting in images of nearly equal size and permitting the use of both eyes together.

#### **Occupational Benefits**

In many occupations the wearing of spectacles is inconvenient or not feasible. Patients who have had both eyes operated on for cataracts usually wear thick spectacle lenses which permit normal vision while looking through the center but cause distortion when looking through the remainder of the lens. This makes it unsafe for some persons to drive a motor vehicle. Contact lenses provide such patients with undistorted side vision and they may safely perform occupations where side vision is essential.

Spectacles may be replaced by contact lenses for people who work out of doors and are exposed to the elements, such as sailors, fishermen, policemen and firemen. Professional athletes in increasing numbers are resorting to contact lenses, since they find spectacles quite a handicap. In the entertainment field contacts are commonly used—even to provide a change in eye color when circumstances require it.

About 20 per cent of the population is so nearsighted that clear vision beyond arm's reach cannot be obtained without the aid of glasses. These people see larger and brighter images through contact lenses and their side vision is undistorted.

Those who wear glasses only intermittently, as for reading, are not candidates for contact lenses.

#### **Fitting Procedure**

To protect the patient from eye injury a certain fitting procedure should be followed, and this is best performed by and under the supervision of the ophthalmologist.

First there should be a complete ophthalmological examination to make certain there is no active disease which negates the wearing of contact lenses. This will evaluate the patient's need for them and determine whether he is emotionally suited to the fitting routine.

At this examination the spectacle correction is obtained and the curvature of the patient's cornea accurately measured by an instrument known as the keratometer or ophthalmometer. Following this a trial contact lens of proper curvature is carefully inserted into the patient's eye and its fit evaluated by means of another instrument known as the slit lamp.



Should the lens be pressing abnormally against any area of the cornea it is replaced by another lens of different curvature and again evaluated for fit. This procedure is repeated until the proper trial lens is found. With this in place the strength of the correcting lens is evaluated; then the trial lens is removed and the cornea carefully examined to be sure no injury has resulted. If there is none the lenses are ordered from the laboratory.

On subsequent visits the patient receives instructions on insertion and removal of the lenses and the cornea is inspected for any sign of injury. Over a period of six to eight weeks the wearing time is gradually increased and the lenses are adjusted for size and power until the final specifications are reached. At the end of this period the average wearing time varies from four to 18 hours. Anything less than four hours is unsatisfactory; anything longer than 18 hours not advised. At each visit the patient is examined with the slit lamp to be sure the cornea has suffered no damage. The total office time required is about five hours over a period of six to eight weeks. Anything less would be inadequate to assure both doctor and patient of a good fit.

#### Acceptance Factor

The successful use of contact lenses by a large number of patients has followed the introduction of the corneal type, and refinements in the fitting technique. Suppliers estimate that over four million pairs of corneal lenses have been produced on individual prescription to date.

In a recent survey of over 600 patients in the San Francisco area who were fitted with corneal lenses during

a period of two and one-half years Dr. Richard Westsmith found some interesting results. Ninety per cent of the patients were wearing their lenses satisfactorily, and ten per cent were not. Of the group not wearing them one-half gave up for reasons unrelated to the fitting of the contacts. For example, one young lady reported that she got married and didn't need them any longer. The remainder of this group, or five per cent of the total, failed to wear their lenses because of continued irritation or inability to master the technique of insertion and removal.

We are confident that the percentage of failures will be diminished in the future as we find the proper method to deal with them.

#### Summary

In summary, the value of contact lenses has been clearly established for many patients who cannot wear spectacles for various medical, occupational or cosmetic reasons. Contact lenses for bifocal wearers are still in the experimental stage. Nearsighted individuals of moderate and high degree are generally good subjects for them.

Contact lenses are perfectly safe if fitted by and under the direct supervision of an ophthalmologist. The public should avoid establishments which advertise extravagantly and claim that everyone can be fitted with contact lenses. This is simply not true. Finally, a patient who is approved by the ophthalmologist as a good candidate for contact lenses is assured of 95 per cent success in getting a satisfactory fit. The chances for greater success will undoubtedly improve with future refinements.

# ORGANIZED LABOR'S PRESCRIPTION FOR INDUSTRIAL VISION CONSERVATION

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Voluntary cooperation between management and labor is the key to success.\*

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THE basic ingredient of labor's prescription for industrial vision conservation is voluntary cooperation between management and labor. There are other ingredients, of course; but without this fundamental one the eye program prescribed may fail miserably or yield frustrating results. As in the broader area of safety and occupational health, cooperation is the key to complete success.

Unfortunately this generalization concerning cooperation belongs in the same category as the truism that "everybody" is "for" safety. For it is not enough to think logically about vision conservation; intelligent action is also required. Such action is based on logic and reason. Every person logically places a high value on his eyesight, but his actions frequently challenge the reasonableness of this conclusion.

The principal stumbling block in the path to effective sight conservation in industry is the improper attitude of management and labor. Some firms are satisfied to recognize the logical conclusion that every employee values his eyesight; to order identical

goggles by the gross; to publicize an edict that all employees must wear goggles, and to pay high insurance rates for eye injuries.

Other firms do even less. They emphasize the smallness of their work force; the high cost of providing an effective sight conservation program; the pressure of other matters; and they conclude that the common sense of workers will solve the problem.

On the side of the workers all too frequently there is unquestioning acceptance that safety in general and sight conservation in particular are the exclusive responsibility of the employer; there is the belief that he is not too concerned about these problems. There is the attitude that the employer has handed down his edicts, now let him enforce them; the goggles are uncomfortable and no good anyhow; the production requirements can't be met if the employee has to bother about safety rules; the foreman is more concerned with output than safety; and, after all, why should the worker bother since he has gone this long without an eye injury. The net result in such situations is well known; management blames labor and labor blames management and eye conservation fails.

\* Presented at the Annual Conference of the National Society for the Prevention of Blindness, New York, February 26, 1959.

### Technical Factors

Obviously, there are other stumbling blocks—failure to re-locate and re-design existing equipment; to determine what kind of eye protection is necessary for each worker; to provide eyewear that is efficient and comfortable; to establish rules for wearing it; and a host of other problems that may be termed technical.

But the primary obstacle—improper attitudes—must be eliminated or the whole program is in constant jeopardy. Understanding, mutual confidence, mutual participation and joint responsibility are essential to voluntary cooperation, and all these factors can be found most readily in joint labor-management safety committees.

Are such committees a new idea? Would the creation of a joint committee for industrial sight conservation be a radical departure in labor-management relations?

### Record of Joint Committees

The record speaks for itself. In 1954-55 the Bureau of Labor Statistics of the U. S. Department of Labor made a survey of collective bargaining clauses (Bulletin 1201) in contracts and learned that 1,750,000 workers enjoyed the benefits of joint labor-management safety committees. Another 250,000 served on safety committees which apparently were not fully joint in their operation.

How do these committees work out in practice? Again the record is clear. The Bureau of National Affairs, Inc., a private research firm, conducted a survey in 1955 of company safety programs and came up with these findings:

Most personnel executives answer "yes" to the question: Is it advisable

to have union representatives on the safety committee?

In companies having unions, joint union-management safety committees are found in 52 per cent of the larger companies and 63 per cent of the smaller ones.

Many of the larger companies have joint safety committees in addition to management committees.

In smaller companies the joint union-management safety committees tend to be a substitute for the management safety committee.

In several companies which do not have joint committees, the union maintains its own safety committee which polices safety measures and reports to the company safety director.

### Cooperation the Key

It is unfortunate that these data are not current, but there is no question that in the future there will be constant growth in the number and value of these joint committees. At the next AFL-CIO National Conference on Safety and Occupational Health their role will be given major attention. We shall put into practice our basic belief that in matters of safety labor-management cooperation is the key to success.

Where joint committees already exist their machinery can be readily adapted to an effective eye conservation program. Where there are none they can be established as the modest beginning of an over-all joint safety program.

What can joint committees do to develop proper attitudes toward a good vision program?

To begin with, the union members in a plant, and their families as well, are a ready-made communication

system available to the employer for the asking. The importance of the family cannot be overlooked—although all too commonly it is. Doesn't partial or total loss of vision affect the wife and children of a wage earner as seriously as it does the worker himself? Yet management in many instances continues to ignore this apparatus of communication, refusing to recognize the collective bargaining agent as anything more than the representative of the workers for wages, hours and working conditions.

The union represents families, not individuals, for without the support of families the unions could not endure.

#### **Importance of Participation**

Next, by making the vision conservation program a joint responsibility management will find the touchstone of cooperation—participation. This means working with the union to convince employees that management is seriously interested in conserving their vision; that management has some ideas on the problem and would be receptive to ideas from the union; that jointly they could develop a program and jointly administer it. Moreover, there would be machinery in existence for bringing out in the open complaints or objections from the workers and considering them seriously.

The failure to wear goggles may be more than a whim of a recalcitrant worker. If the lenses are off center they may cause serious discomfort; goggles of the wrong size, weight and fit may be unbearable for an eight-hour working day. When a worker who is about to be retired is used as the first-aid man for eye injuries workers may well question just how seriously management takes its conservation program.

Perhaps the absence of any trained first-aid specialist on the second or third shift is not just another complaint of an ingrate.

Genuine participation means joint consideration by management and labor in investigating the causes of friction and removing them where they do exist. Above all, participation does mean that the program is designed and administered "with the consent of the governed"—and no better system for cooperation has yet been developed in the world.

A joint union-management vision conservation program broadens responsibility and duties. When a union accepts an opportunity to share in the program it also accepts the duty of making it work. There is no more effective method of administering it than demonstrating that the careless worker has no defense. The decision of a joint committee deprives the uncooperative worker of all his alleged defenses. He has been found guilty by a jury of his peers. This aspect is most important to the foreman, since it means that he is no longer considered a snooper. Only those who have seen workers policing themselves in a safety program can understand the possibilities of voluntary cooperation.

To conclude, the basic specific of any prescription which the trade union movement might write for an industrial vision program is voluntary cooperation between management and labor. This is not a universal cure; it must be used with care, and within the limits of its purpose. Mere presence of a union in the plant is not enough; but capable management imbued with sincerity will be repaid for any offer of good will with a response that can be had in no other way.

# The Subjective Element in Perception

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Subjective factors, such as our wishes, or the value set upon the object shown, markedly influence the act of perceiving.\*

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IN studying the workings of the eye and visual system we often neglect what some people consider to be the most important element of visual perception—namely, its active and directed character. It is well known that we tend to select and interpret sensory data in the light of our interests and general attitudes.

The tendency to react to what is given in terms of what is expected or familiar is the source of many illusions and misinterpretations of everyday life. I doubt whether many readers spotted the double "of" which occurred in the preceding sentence. We do not expect to see a word printed twice like this and so we do not notice it when it does occur. The eye scans every line and presumably both words must affect the retina, sending impulses to the brain. There must be some process at work which prevents them from registering correctly in our consciousness. This process enables us to pay attention to that which interests us at any particular moment.

Perceiving is always selective; only certain aspects of a given situation are noted by the percipient. If we show a picture to a group of subjects for a

short interval of time, it will be found that every subject has selected different features in making his perceptual response.

Subjective factors, such as our wishes, or the value set upon the object shown, markedly influence the act of perceiving. In a recent experiment, Bruner and Goodman have shown that, if children of school age are asked to estimate the sizes of coins, the estimates err consistently in a positive direction. Coins are judged to be larger than cardboard discs of identical objective size. Further, the greater the value of the coin, the greater is the observed deviation of apparent from real size. As these estimates were made with the test object in full view, it must be concluded that the value-significance of the coin directly influences perceived size.

## Perceiving and the Individual

The highly individual nature of perceiving is well brought out in experiments in which designs are exposed to a number of subjects for short periods of time.

In an experiment by Bartlett designs were presented for brief intervals, ranging from  $\frac{1}{16}$  to  $\frac{1}{4}$  of a second, and the subject was required to describe or reproduce what he had seen immediately after each exposure. It

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\* Reprinted from *The Optician* (London) of December 19, 1958. Mr. Brierley is graduating from Oxford University in psychology and philosophy.

was found first that an objectively simple figure might give rise to a surprising variety of interpretations; and secondly that in no case did the subject distinguish between what he had seen and what he merely thought he

One of the designs employed in the Bartlett experiments and interpreted variously as a pick-axe, turf-cutter, anchor and prehistoric battle-axe.



had seen. Thus the design shown was once called a "pick-axe" and drawn with pointed prongs. Once it was termed a "turf-cutter" and made with a rounded blade. Six subjects called it an "anchor" and exaggerated the size of the ring. Only once was the point of the blade correctly reproduced—by a subject who said that the design represented a "prehistoric battle-axe." These examples of perceptual interpretation are typical of Bartlett's findings.

#### Verbal Suggestion and Perceiving

Simple experiments of this kind give even more striking results if the subject is given a verbal suggestion as to what he is likely to see. Zangwill has conducted an experiment in which a somewhat ill-defined ink blot was exposed to a number of subjects for a very short time. Information was given that the blot was intended to represent an animal. Every subject drew—and presumably saw—a recognisable animal form. The same blot was exposed again a few minutes later, this time with the information that it was intended to represent a range of mountains. A large number

of the subjects reproduced the blot with a strong resemblance to a mountain range and only a very few realised that it was the same blot they had been shown previously. Although the conditions of this experiment are rather artificial, it provides a confirmation of William James' dictum that, whilst part of what we perceive comes through our senses, another, and it may be the larger, part, comes "out of our own head."

If the perceptual judgments a person makes depend to an appreciable extent on subjective factors, may they not indicate more general aspects of his personality? We certainly talk of the "way a person looks at things" or the "light in which he sees them." This idea is the basis of the Rorschach test. Again, ink-blot tests are shown to the subject, who is asked to describe what he sees in them. Relationships have been worked out between these reports and personality characteristics. Thus a tendency to respond to the whole blot rather than to its parts is supposed to indicate a person fond of expansive generalisations and neglectful of obvious detail. Conversely, pre-occupation with small details in the blot indicates habitual attention to the concrete, and a more practical personality.

#### Rorschach Experts

This test is taken so seriously that in the United States there are acknowledged Rorschach experts who do not use any other methods, but simply study the responses given by patients to these ink-blot tests. In practice, however, the analyses of these experts include too many vague and ambiguous terms. Two quite different people might accept the same report



as an adequate assessment of their characters. In reading such a report they would almost inevitably pick out that meaning of a term or phrase which they considered applicable to themselves, ignoring all other meanings which might not be so appropriate. Nevertheless, even if these criticisms are valid, the method would appear to have an adequate theoretical basis.

The meaning given to words or groups of letters has also been studied. In place of the ink-blots used by Zangwill, S  pola exposed the nonsense syllables "sael" and "wharl." If it was suggested to the subject that he would perceive names of animals, he perceived them as "seal" and "whale." If he was led to expect something to do with boats, he perceived them as "sail" and "wharf."



The "Airoplane"

In one of Bartlett's experiments, subjects were shown a rather indefinite representation of an aeroplane, beneath which was written "An Airoplane." In nearly all cases the observers reported after the first or second glance that they saw an aeroplane, and in every case but one the writing was said to be "An Aeroplane." The subjects had assumed that the writing must be meaningful and relevant, and had interpreted it accordingly.

The realisation of the r  le played by these subjective factors in percep-

tion raises some interesting questions. May not the processes described sometimes work in the converse direction? If subjects assume that sequences of letter are not meaningful, we may expect that they will tend to impose disorder on perceptions which possess some degree of order.

Suppose that a sight-test chart were in use on which one of the rows ran PLTCMC. The patient is having difficulty in distinguishing the letters but he reads correctly PLTCM. Since he believes that there is no sequence or pattern in the letters he judges the next one to be O. This is important; for patients do not merely say what they see; they are anxious to give the right answer.

Sequences of letters calculated to minimise these effects of attitude and expectation on the part of the patient are those in which no letter bears any relationship to the others in the row. Under these ideal conditions, response must be made to each item separately, giving a better assessment of the real visual ability. This is a point for very careful consideration when sight-testing material is being designed. We have seen the extent to which perception is influenced by extraneous factors, and their effects are never to be overlooked.

#### RESEARCH IN UVEITIS

A three-year research project in the etiology, diagnosis and treatment of uveitis will be initiated this year at the Institute of Ophthalmology of the Columbia-Presbyterian Medical Center in New York. Uveitis is the cause of 10 per cent of all blindness in this country, and many aspects of the disease are not understood. The Institute's incoming director, A. Gerard DeVoe, M.D., will supervise the project.

# GLAUCOMA SCREENING IN CONNECTICUT

GRACE E. MILLS

Program Director, Connecticut Chapter  
National Society for the Prevention of Blindness

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Volunteers have worked untiringly to alert Connecticut citizens to the dangers of this blinding eye disease.

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THE glaucoma detection program in Connecticut has come a long way since the first mass screening was held in Trumbull's Middlebrook School on a cold January evening in 1958. That night was the worst that nature could provide, replete with intermittent sleet and rain, freezing temperature and icy pavements. The despondent volunteers were certain that their efforts would be in vain, for surely no one would brave the storm if he did not have to.

Preparations were completed and the workers went out to dinner. On their return their flagging spirits soared, for the halls of the school were jammed with people. We were totally unprepared for the huge attendance. Although the line moved rapidly and 400 people were screened many had to be turned away disappointed at the end of the evening.

A week later a second screening was held in the same town at a different location. Again nature plagued us with a show of furious weather, but the plucky Trumbullites came out in force and 552 people were screened in two-and-a-half hours. As before, many people had to be turned away. The interest and support of those who responded on both occasions in spite of frigid weather confirmed our hopes that glaucoma screening could be suc-

cessfully presented by the NSPB Connecticut Chapter as a community project.

Other screenings were planned but several months elapsed before procedures were worked out and finally approved by all concerned, so that we could move ahead. A liaison committee of three ophthalmologists appointed from the eye section of the Connecticut Medical Society to work with the chapter has been of inestimable value. This committee is readily available for consultation, has approved the forms and materials that are used, and has been most helpful in securing professional help in areas where there are no resident ophthalmologists. Under its guidance the screening has been streamlined to a high degree of efficiency with a minimum of planning meetings. To date the screening has included only the checking of visual acuity and tension. Further tests have been discussed but have not yet been added to the procedure.

## Planning a Screening

When a decision is made to set up a screening in a given area exploratory conferences are held with the local health department and the various other health agencies to gain their support and arrange for local follow-up. A local committee is formed of

representatives of any group which would be advantageous to the program—the ophthalmologists (usually the NSPB professional advisory committee chairman, if there is an NSPB branch in the area), the director of public health, nursing organizations, press and radio, churches, schools and the sponsoring service group, usually the Lions.

A date is chosen and a location selected. Plans are made for the publicity campaign which is concentrated into one week before the screening. Every means of communication is used to reach the adult population of age 40 and over. An approved flyer is sent to the homes via school children, or in laundry bundles, or distributed by churches to their members. There are press releases with pictures, radio announcements and interviews.

The estimated attendance determines the size of the set-up. In some areas adequate space has been available in the hospitals but in others the screenings have been held in school gyms or cafeterias. The use of a cafeteria eliminates transporting tables, since the type provided there, if six feet long, is good for examination purposes. It is more difficult to conduct a screening in a hospital because of its 24-hour schedule. No matter how carefully plans are made, routines are disrupted somewhere along the line. Hospitals do not have large unused spaces available for mass screening. Fire laws prohibit the blocking of corridors and limit the number of occupants in many areas. These restrictions, together with the entrance and exit facilities, must be checked before definite plans are made.

School buildings offer excellent facilities with ample floor space, wide cor-

ridors and more parking space. Screenings are planned for the evening hours of 7:30 to 9:30, when the building is vacated, so that no schedules are disrupted. Set-up crews start working as soon as school is dismissed. A classroom is designated for showing the film on glaucoma, "Hold Back the Night," which runs continuously during each screening.

#### Units Based on Attendance

Screenings are planned by units based on the estimated attendance. Each unit can care for approximately 60-80 people in an evening period. A unit is headed by an ophthalmologist who donates his time and skill as a community service. He is assisted by a nurse (or two, if three examining tables are used), a recorder, a volunteer trained to check visual acuity, and an aide (usually a Lion) who keeps an even flow of patients to the doctor. Two or three sturdy tables, strong enough to support an adult, and a card table for supplies, are needed for each unit. A chair for the recorder, a waste basket and a footstool for use in assisting people onto the table complete the equipment. Six to 10 units are needed for a screening. However, in New Haven 20 units were set up in Hillhouse High School when 685 people were screened in two hours. Twenty-two ophthalmologists donated their services there for the largest program to date.

Having a service club sponsor the program provides an available group of volunteers willing to serve in many capacities. The Connecticut Lions Clubs have been extremely cooperative and have sponsored all but four of our screenings. They have proved to be enthusiastic and able.

The sponsoring group provides volunteers who serve at the registration desk, or as recorders, guides, doctors' aides, dispensers of coffee to the workers, equipment arrangers and parking attendants. They also supervise the film showing. Many of the service club wives assist where needed. In areas where trained vision screeners are not available the service club wives often are given special training to serve in this capacity.

The screening procedure includes five steps: (1) The patient registers,

keeping the card given him as he proceeds to the various areas; (2) visual acuity is checked and recorded on card; (3) nurse administers drops, takes card, reads visual acuity to doctor who takes tension; (4) doctor reports findings to recorder who marks them on card (in red pencil if tension is elevated); (5) a guide after quickly scanning the patient's card directs him to one of three interpretation areas where he has a conference with a nurse. If vision is apparently normal he is advised to have a periodic eye

**Glaucoma Screenings in Connecticut, January-May, 1959**

	Screened	Referred	Positive	Suspected	Negative	No Report
January 6, 1959 Bridgeport Hospital 10 units . . . . .	348	31	3	3	15	10
April 7, 1959 Hillhouse High School New Haven 20 units . . . . .	685	56	5	7	13	31
April 13, 1959 Walter Dolan High School Springdale (Stamford) 7 units . . . . .	439	20	4	6	6	4
Francis T. Maloney High School Meriden 6 units . . . . .	312	25	1	4	11	9
May 19, 1959 Park City Hospital Bridgeport 10 units . . . . .	325	23	..	1	6	16
May 25, 1959 Southington High School Southington 7 units . . . . .	420	18	3	1	11	3
	2,529	173	16	22	62	73



The screening in progress at Francis T. Maloney High School, Meriden

examination and is given literature. If he seems to have a vision problem a medical examination at an early date is advised and a periodic examination stressed. If an elevated tension is indicated the nurse consultant (who has had special briefing) explains the need for an immediate medical eye examination. The patient is given a referral card to be filled out by the doctor when he has had this examination and to be returned to the Chapter office for the statistical record.

When a referral card is not returned within a period of two months a reminder is mailed to the patient. If no answer is forthcoming a public health nurse does a personal follow-up to get the patient under care.

#### **Public Education Needed**

Conferences at the interpretation area during the screening reveal the acute need for more public education on eye care. Many people have never had an eye examination; many have never had medical eye care; and many are unaware that the eye is subject to conditions that cannot be taken care of by refraction. The first aim of a screening program should be public education. This we feel is gradually being accomplished through the press

and radio releases, the flyers, the film "Hold Back the Night," and the individual conference available to everyone attending a screening. That the efforts put forth in this field are bearing fruit is evidenced by the fact that many of the ophthalmologists have reported an increase in appointments after publicity is released.

The ultimate in good eye care, we know, is a periodic medical examination, but until such time as that Utopia is reached, we trust that the glaucoma screening program will serve as a useful means of alerting the public to the danger of this blinding eye disease.

#### **The 1959 Record**

Since January 1959, 2,529 adults have been screened under chapter auspices and 173 referred for further examination. Sixteen have been diagnosed as positive glaucoma, 22 as suspicious and in need of follow-up; 62 as negative. Seventy-three referrals are still to be heard from.

There is great satisfaction and reward in reviewing some of the cases that screening has uncovered and that have been brought under treatment:

The young housewife who went through the line just for fun and found

that even with 20/20 vision one can have positive glaucoma.

The woman who brought her husband thinking he needed care and instead discovered that she was the

one who had an elevated tension.

The little nurse who was checked and found to be a victim.

Glaucoma knows no age limits, nor does it respect race, creed or color.

## The Retina in Color TV

**F**OR the first time scientists can see the inner parts of the eye projected in color on television screens. This remarkable feat, described in *Guildcraft* for June, crowns years of work at the National Institutes of Health by Murray C. Brown, M.D. and his assistant Willard Whitehouse.

The television camera amplifies light, and this made it possible to make films of circulation in the frog, the first living biology recorded in this way. At about the same time the human eye was televised in black and white. Color was then impossible, because it demanded light beyond physiological tolerance. Finally a retinal camera was developed using a modified and filtered light source, and color films could be made.

"There never was a better way to view the eye as the dynamic thing it is," Dr. Brown said. "We can watch our work on a color monitor, and we also have an oscilloscope which enables us to measure widths and depths of vessels in the retina. Then we have a kine recorder, equipped with a motion-picture camera which makes a permanent record of what we televise.

"We are also experimenting with animals, especially the cat, selected because its eye is roughly comparable to man's. We can use a microscope with a cat, not with a human, and this gives us a magnification up to 150 diameters. We frankly do not know where our work will lead us. Already

we have crossed frontiers, and we expect to cross more.

"We are pleased," Dr. Brown added, "to find ourselves engaged in one of the most fascinating and exciting investigative adventures of our time."

### 1959 SCHOENBERG LECTURE

The annual Schoenberg Memorial Lecture, sponsored jointly by the New York Society for Clinical Ophthalmology and the National Society for the Prevention of Blindness, will be given at 8:15 P.M. on Monday, December 7, at the New York Academy of Medicine, 2 East 103rd Street.

Algernon B. Reese, M.D., clinical professor of ophthalmology at Columbia University College of Physicians and Surgeons, will give the lecture on "The Role of the Pigment Epithelium in Ocular Pathology."

Dr. Reese will discuss melanomas and simulating lesions, a frequent cause of unilateral blindness if not recognized and properly treated.

Mark J. Schoenberg, M.D., an eminent New York ophthalmologist, was a founder of the New York Society for Clinical Ophthalmology and was the first chairman of the National Society's Committee on Glaucoma. Since his death in 1945 the two societies have joined each year in honoring his memory.

All physicians are welcome.



# Health Department Follow-up in Glaucoma

A. WILLIAM MENZIN, M.D.

Director, Research and Program Development  
Dade County Department of Public Health, Florida

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Under Dade County's cooperative program contact with glaucoma patients will be maintained.

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SINCE recent surveys have shown the incidence of glaucoma to be far greater than had previously been suspected it behooves the medical profession, and the general practitioner in particular, to play a more active part in the detection of this dread disease. The incidence of undetected glaucoma is currently estimated to be approximately two per cent in adults above age 40, involving about 1,500,000 persons in the United States.

Of all the diagnostic methods available today routine and repeated tonometry still give the most reliable information. This procedure should be taught to all medical students and should become an integral part of the physical examination of the patient 40 years of age and older.

The department of ophthalmology of the University of Miami School of Medicine in conjunction with the Dade County Health Department has set up a glaucoma screening clinic with the following two main objectives in mind:

1. To teach routine tonometry to all senior medical students, so that as practitioners they will be as familiar with use of the tonometer as they are with that of the sphygmomanometer.

2. To establish an effective glaucoma screening and follow-up program.

Although screening, properly and adequately carried out, is one of the soundest approaches to the prevention of blindness caused by glaucoma, it is felt that maintenance and continuity of therapy are equally important. Many glaucoma patients do not receive the necessary after care to prevent almost certain blindness. Very often they fail to return for follow-up examination because of illness, infirmity, lack of interest, discontent with treatment and failure to understand the seriousness of the condition. As in diabetes, glaucoma requires close supervision and treatment for the rest of the patient's life. It is hoped that the problem of adequate patient follow-up can be solved by active public health participation.

## Dade County Program

In Dade County glaucoma patients will be visited in their homes by a public health nurse with the following objectives in mind:

1. Discussing problem of glaucoma with the patient and family.
2. Instructing in technique of instilling eye drops.
3. Assisting patient with transport-

tation and financial problems related to the disease.

4. Making family aware of the seriousness of the disease and the implications of interrupted care.

5. Aiding patients in obtaining more intensive examinations.

6. Insuring that the patient maintains regular attendance at eye clinic or ophthalmologist's office.

7. Familiarizing the patient with

other available community services, such as Lighthouse for the Blind and Red Cross.

Only by these methods can we keep the glaucoma patient under the necessary observation. Otherwise he is doomed to ultimate blindness. Adequate public health follow-up with close ophthalmological supervision is certainly one of the major solutions to this difficult problem.

## Blind Children in California

AS part of a prevention of blindness project of the California State Department of Public Health, a survey was made of blind children in the state, described in *Public Health Reports* for May, 1959. Information was gathered from the medical records in school districts and other indicated sources, and though the coverage is not complete, the survey is the most comprehensive yet made. The present report includes only children aged up to 18 years with visual acuity of 20/200 or less in the better eye with maximum correction.

A total of 1,338 blind children was found, making a rate of 33 per 100,000 children. The largest group of school-age children (35 per cent) were in classes for the partially seeing, using large-print textbooks, and 9 per cent were in regular classes. Another 25 per cent were in regular classes with supplementary work in braille. Only 18 per cent were in schools for the blind.

Three-fourths of the children five years and younger were blinded by retrolental fibroplasia, the largest single cause of blindness. There was a total of 547 victims of RLF, of whom

130 were in the 6 to 17 age group. Strict control of oxygen administration to premature babies has now reduced the cases of RLF to one in 1957 and zero in 1958. The next largest cause of blindness was congenital conditions, which blinded 455 children. Though accidents accounted for only two per cent of the blind list, presumably all were preventable. Of the 28 accidental injuries, seven were due to the explosion of dynamite caps or other deadly playthings.

### CATARACT STUDY IN PENNSYLVANIA

Cataract was the leading cause of blindness in persons examined for pension for the blind in Pennsylvania in the last six months of 1958. This was determined by a study made by the Office for the Blind in the Department of Public Welfare of a district embracing 16 counties and representing a typical cross-section of the state.

Of the 392 cases reviewed, 242 (62 per cent) had a diagnosis of cataract. Surgery was recommended for nearly a third of these cases; 20 per cent of the patients were diagnosed as inoperable; 14 per cent had already undergone operations for cataract, and about 10 per cent rejected surgery because of age, health, or other reasons.

## No Substitute for Early Treatment in Strabismus and Amblyopia

"TREATMENT of the Patched Child and His Family" was the subject of a lecture given by Dr. Robert W. Harger of Indianapolis at a meeting of the midwestern section of the American Association of Orthoptic Technicians held in that city last May.

Dr. Harger stressed early case-finding as a major step in the treatment of strabismus and amblyopia, as well as in the acceptance of treatment by the child and his family. To accomplish the most for these children facts about the development of vision must be understood by parents, nurses, technicians, pediatricians, general practitioners and optometrists.

Dr. Harger said that while early treatment has no substitute, because both the physiological and social reflexes are more easily molded before children get into school, late treatment must be given a fair trial in the school-age child. Depending upon the diagnosis, recovery may depend upon stimulation of the weak eye through total or 24-hour patching of the other eye; also on active stimulation of the eye with poor vision, using such methods as flashing exercises, extra fine line drawings, red pen or pencil for school, or stringing beads. The reasons for patching, length of treatment, the point at which patching can be discontinued or partially discontinued need to be understood by the patient and his family. Dr. Harger decries pity for the patched child and suggests instead "selling the whole family, neighborhood, school, and in-laws."

In discussing early case-finding Dr. Harger reported on the 1958 vision testing of five-year-olds sponsored by the Marion County branch of NSPB Indiana Chapter and Delta Gamma of Indianapolis, in cooperation with the division of public health of Marion County and Indianapolis, and Marion County schools. In this project 10,200 children were screened by volunteers recruited from the Parent Teacher Association. Referral was made for those children who missed with either eye the 20/40 line of the illiterate E chart. The referral rate was close to four per cent. The breakdown of 200 referrals as reported by doctors was:

	Per Cent
Congenital defects.....	4.5
No special treatment.....	8.0
Strabismus.....	17.0
Amblyopia.....	15.0
Glasses ordered, diagnosis not specified	28.0
Myopia.....	9.0
Hyperopia.....	18.5

"Congenital defects" included lens opacities, retinal defects and nystagmus. "No special treatment ordered" included both returns marked "examination not necessary" (three per cent) and children for whom glasses would probably be needed later. There is a two to three per cent overlapping of strabismus and amblyopia cases. Dr. Harger estimated that one-half of the children referred for treatment in this program fall into the emergency treatment group in which there was either strabismus, amblyopia, or high

refractive error so that nothing had ever been in focus and vision had never had a chance to develop properly.

Dr. Harger concluded by expressing

the hope that a simple visual acuity test will be done when three-year-old children are taken to their doctors for routine examinations.

## Visual Requirements for Drivers

A *Medical Guide for Physicians in Determining Fitness to Drive a Motor Vehicle* was published in *The Journal of the American Medical Association* for March 14, 1959. The following section on ophthalmology is reprinted from the *Guide* with permission of *The Journal's* editor.

**A**DEQUATE vision is essential for the proper and safe operation of a motor vehicle. Visual potentials can be ascertained by using available vision testing instruments.

Licensing authorities have established visual acuity requirements ranging from 20/30 to 20/70. Two states have no specific visual requirements. Every physician should familiarize himself with the visual requirements of his state's licensing authority.

The patient's perception of what he sees is of great importance. As yet, however, there is no practical way of testing for faulty perception. It is important for drivers to have their vision periodically evaluated, particularly those with significant progressive visual deterioration.

*Visual Acuity.* At present we believe that patients whose corrected vision, tested under standard conditions, is 20/40 or better may be advised that this vision is adequate for the task of operating a private vehicle. Those with vision less than 20/40 should be referred to an ophthalmologist to ascertain if vision can be improved. Patients with less than 20/70

corrected vision in the better eye should be advised not to drive.

At present there is no uniformity of opinion regarding the safe driving ability of individuals with visual acuity between 20/40 and 20/70. Furthermore, there are no scientific data available which permit the establishment of fixed standards.

The physician, in serving the best interests of these patients, should consider the conditions under which each patient drives and the vision the patient possesses. He is then in a position to advise the patient whether or not he should drive in congested traffic, in hazardous road conditions, at high speed, or at night. It is hoped that continuing research in this field will lead to a more exact basis upon which to advise patients.

The one-eyed or aphakic driver presents special problems. Many individuals in this category acquire judgment of distance and develop the ability to drive safely. Those individuals who have not acquired this judgment should be advised not to drive and to consult an ophthalmologist.

Regulations for licensing drivers of commercial and passenger transport vehicles usually require higher visual acuity than most licensing agencies require for drivers of private vehicles.

*Visual Fields.* Second in importance to visual acuity are visual fields, i.e., form fields. These are obviously im-

portant for safe driving, for a driver must of necessity possess some depth and lateral perspective in the horizontal meridian in order to pass approaching vehicles safely as well as being aware of approaching vehicles or pedestrians from the side.

Patients with visual form fields of 140 degrees or more may be advised that this field is sufficient for the task of operating a motor vehicle. Patients with form fields less than 110 degrees should be advised not to drive. The patient with a field between these limits must be evaluated on the basis of the conditions under which he drives and the amount of lateral vision he possesses.

Individuals with markedly constricted fields, such as those suffering from severe glaucoma or retinitis pigmentosa with peripheral blindness, are unfit for safe driving and should be advised not to drive.

*Ocular Muscle Imbalance.* The accident potential of ocular muscle imbalance is indirect through causing driver fatigue. However, when diplopia occurs, accidents are directly attributable to the diplopia. Therefore, all patients with uncontrolled diplopia should be advised not to drive a motor vehicle.

*Color Blindness.* Color blindness has in the past been considered to be a potential cause of highway accidents. At the present time, however, traffic lights have been standardized, and, except in cases of those engaged in interstate or heavy transport, it is doubtful if color blindness or deficiency is of any great consequence.

*Dark Adaptation.* Dark adaptation and susceptibility to glare are of importance in night driving, but at the

present time no valid data are available as to their importance in the causation of highway accidents. Of course, dark glasses should not be worn for night driving and windshield tinting should be limited to the upper one-third.

*Depth Perception.* Tests for depth perception are inadequate at this time. The road test is still best and is practical.

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## INVESTIGATE NEW DRUG

Warnings of possible danger in the use of alpha chymotrypsin for cataract surgery resulted in the formation of a committee on its use at the meeting of the American Academy of Ophthalmology and Otolaryngology held in Chicago in October 1958. Derrick Vail, M.D. is chairman of the committee.

A report by Richard C. Troutman, M.D., published in the *Transactions* of the AAOO for November-December 1958, described a visit made by himself, Dr. Vail, and other ophthalmologists to the Barraquer Clinic in Barcelona, Spain. Dr. Joachim Barraquer, who introduced the use of this enzyme, demonstrated its powerful effect on an eye-bank eye: the actual lysis of the lens zonule. Though the American ophthalmologists could observe no apparent damage to eye tissues in Dr. Barraquer's postoperative cases, they felt that alpha chymotrypsin had not been sufficiently investigated. Therefore Dr. Troutman suggested the creation of a committee to study its use and its effects.

The National Society for the Prevention of Blindness is helping to finance the statistical part of the evaluation of this proteolytic enzyme.

# THE PREVENTION OF BLINDNESS PROGRAM

## Its Objectives and Scope

VIRGINIA S. BOYCE

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National Society for the Prevention of Blindness  
New York

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**If current scientific knowledge of the causes of eye diseases and injuries can be applied for the benefit of the community, blindness will be sharply reduced.**

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**T**HE first step in developing a prevention of blindness program is an investigation of community needs, existing resources and related programs. Such a fact-finding survey should include:

1. Collection of data on the size and characteristics of the community's population; on the number of children and adults with eye problems; and on the causes of defective vision and blindness.

2. Review of existing legislation and regulations relating to sight conservation; for example, control of hazards to eyesight such as fireworks, BB guns, air guns; provision for vision testing and follow-up of children with eye defects, under the school health act; standards and facilities related to education of partially seeing children; and regulations to protect the eyes of industrial workers.

3. Study of community programs and resources to determine whether activities such as the following are being carried on and if so whether the needs are being met:

- a. Case finding of early eye disease and provision for follow-up of persons in need of care.

- b. Eye care and casework services for persons with eye problems requiring interpretation.
- c. Educational facilities for partially seeing children.
- d. Eye safety programs in school laboratories and vocational classes.

The broad scope of the prevention program and the need for reaching persons at all age levels indicate the importance of joint planning and the cooperation of all community agencies concerned with health and welfare.

### Preschool Vision Screening

Screening programs are needed for children age four to six so that they may have the benefit of early correction of eye defects, if needed. Detection of crossed eyes is particularly important since this condition will result in visual loss if neglected. Studies indicate that children with crossed eyes should receive treatment before they reach the age of four. Any eye trouble should have attention before a child enters school so that he may have the best possible start.

The National Society has found that preschool vision screening can be



done effectively by volunteers who are properly trained and professionally supervised. An important by-product of a project of this nature is the education of the volunteers themselves. In the course of their training hundreds have become aware of the vital need for early care of crossed eyes, and they have learned that even the most minor symptoms of eye trouble should be taken seriously.

During the past three years the National Society has initiated pre-school vision screening projects in 32 areas. About 10 per cent of the children screened are found to have eye trouble requiring corrective treatment.

#### **The School Program**

Once the child attends school his vision is checked periodically, usually by the teacher or the school nurse, and arrangements are made for correcting defects. It is estimated that one-fourth of the children of school age, or approximately 10,000,000, need eye care. This indicates the need for working with departments of education to keep the teachers alert to eye health problems. Teachers are in a key position to observe early signs and symptoms of eye trouble; to teach eye safety; to recognize environmental factors such as lighting, color and reflection value of paint, and the elimination of glare as important to the ease and comfort of seeing in the classroom. Keeping teachers informed about these facts will help to provide proper seeing conditions for maximum eye health.

One of the objectives of a vision testing program should be to educate the community to the value of a thorough eye examination for every child.

Surveys indicate that one child in 500 of school age has such a serious

visual handicap that he requires special facilities and planning in order to benefit as much as possible from the opportunity for education. At the present time 8,000 of these children are receiving the special attention required, but at least 70,000 more lack the necessary advantages of large-type materials, specially trained teachers and classrooms with the recommended equipment and environment. These facts emphasize the need for additional educational facilities, a greater number of teachers prepared to work with partially seeing children, and more case-finding programs.

#### **Prevention of Injuries**

In spite of the progress that has been made in controlling eye injuries among children it is estimated that they are the victims of at least 122,000 eye accidents each year. Reducing this threat to eyesight depends to a large extent on greater concerted action by all agencies to educate children, parents and professional people on eye hazards and their elimination. Extension of legislation controlling the use of BB guns, air rifles and various dangerous "toys" is essential. The enforcement of such legislation requires constant watchfulness and co-operation of all citizens.

#### **Problems of Adults**

Among the adult population attention should be directed to certain specific diseases which are important causes of blindness. Cataract and glaucoma are likely to increase in incidence because greater numbers of people are living to the ages when these diseases are more prevalent. Early detection of glaucoma is the most important factor in preventing

loss of vision from this disease, because early treatment greatly increases the possibility of arresting it.

Since we have not yet arrived at the stage when all persons have periodic eye examinations, screening programs for adults as well as for children are recommended. Screening for glaucoma among the general population has detected many hitherto unrecognized cases. Such projects usually include tests of visual acuity and field of vision, ophthalmoscopic examination and the use of the tonometer. These programs in various localities have revealed that about one person in 50 over age 40 has undetected glaucoma.

In addition to uncovering patients in need of eye care these projects have resulted in educating everyone involved as to the nature of glaucoma and the value of early diagnosis and continuous treatment. There has been a marked effect, too, on the community's eye consciousness, as the result of publicity given to a screening program.

Cataracts are the leading cause of blindness among adults. In spite of the fact that surgery is so successful in restoring sight to cataract patients, blindness from this cause is not decreasing. Thus the need is indicated for a more intensive public education program, to make people better aware of the possibilities of treatment and the need for accepting the ophthalmologist's recommendations. A patient may delay too long in deciding on surgery, or the ophthalmologist's advice may not be clearly understood.

Education of patients with conditions such as glaucoma, cataract, detached retina and uveitis is vitally important in relation to obtaining

early care, which often makes the difference between blindness and preserving sight. If the social worker has information about the patient's condition and understands the home and family situation she can more readily motivate him to follow the ophthalmologist's instructions.

#### **Eye Protection in Industry**

It is estimated that 300,000 industrial eye accidents still occur in the United States each year despite many excellent programs aimed at their elimination. A good industrial vision program should include: eye examination and special testing for basic visual skills; analysis of jobs for visual factors; eye protection equipment, with correction for the job as needed; specific provision for emergency eye care; proper use of illumination and color; and group and individual education in eye health and safety.

Eye safety is being advanced through an incentive program known as the Wise Owl Club of America, sponsored by the National Society. To qualify for admission to this club a worker must have saved his sight through conscientious wearing of recommended eye protection at the time a work accident occurred. Since 1948 more than 18,000 men and women employed in 2,400 plants in the United States and Canada have been enrolled as Wise Owls. The 22,000 eyes saved by members of the club represent incalculable savings in human suffering and economic loss, and at least a saving of \$88,000,000 in average compensation alone.

Bringing this safety incentive plan to the attention of industrial plants in the community who do not now sponsor it is a worth while service.

Vocational students are exposed to serious eye hazards for which the same types of protective equipment should be provided as are recommended for industry. Teachers and students in these classes are very receptive to the safety message but the actual provision of the necessary safeguards may present a difficulty. It is necessary in this area to work through educational personnel at the administrative level in order to get full recognition and acceptance of the need for 100 per cent eye protection.

#### **Official Programs**

As previously emphasized, every locality has its own specific needs. A first step in attacking the problem is a survey of existing programs to prevent overlapping and duplication of services.

Briefly, here are some examples of what official agencies are contributing:

Departments of education or health are charged with the responsibility of testing the eyes of children when they reach school age; departments of education are providing special facilities for partially seeing children.

Health departments are enforcing the use of prophylactic drops in the eyes at birth as required by law; are responsible for the control of communicable diseases; are helping in case-finding of early eye trouble and in educating the public about eye care.

Labor departments stimulate eye protection in industry through enforcement of safety practices specified by law. Welfare departments and hospitals, as well as child welfare, family casework, and private health agencies with staffs of case workers offer a wide variety of services to individuals and their families on eye

problems. There are, of course, a great many more activities in each of these areas and agency programs vary considerably from state to state.

#### **NSPB Voluntary Affiliates**

Voluntary prevention of blindness affiliates of the National Society at the state and local level are carrying on a wide variety of activities depending on community needs and on the agency's personnel. These include:

1. Public education programs to alert the community to the need for periodic eye examinations and the importance of medical attention for any symptom of eye trouble. This is accomplished through radio, television, the press, displays of material in public buildings, distribution of pamphlets; and participation in meetings of service clubs, women's clubs, church groups, PTA, etc.

2. Educational programs on eye health and the need for early detection of eye trouble directed to specific groups such as teachers, nurses, social workers, family physicians and pediatricians. This may be carried on through talks at their professional meetings, showing films such as "Hold Back the Night," "Johnny's New World," "Glaucoma—What the General Practitioner Should Know," and exhibits on various phases of the program. Participation in high school assemblies, in courses in schools of nursing, social work and medicine helps to alert these groups to preventive action.

3. Case-finding of early signs of eye trouble among preschool children. Preschool vision testing programs have been carried on in nurseries, kindergartens and other locations where children in this age group are

brought together. This also provides an opportunity for interesting volunteers in the agency's program.

4. Case-finding of eye trouble among children in public and parochial schools. A survey of the vision screening program to determine its scope, frequency and methods of testing and whether follow-up is adequate should indicate whether service is needed in this area.

5. Case-finding of eye disease among adults, with special emphasis on glaucoma detection. Suggested locations for such projects are hospital clinics, chronic disease centers, industries, insurance companies, department stores, newspaper publishing offices, radio station staffs, and transportation companies (such as those employing bus and taxicab operators). Business firms with medical departments have readily available resources for testing for eye disease. Such projects should be initiated by testing small groups for which a careful follow-up program can be planned.

6. Casework and follow-up services for children and adults with eye problems to make sure that the recommended treatment is obtained.

7. Promotion of adequate educational facilities to meet the needs of partially seeing children. One should learn from the director of special education whether facilities are available for all visually handicapped children and whether there is need for the prevention of blindness agency to encourage additional service for these children.

8. Eye safety programs in vocational schools and classes and in chemistry and physics laboratories. Depending on the vision testing done by the school, this program may in-

clude screening for eye trouble and proper corrective measures, as well as provision of adequate safety equipment for all students and teachers. Initiating this program depends on whether school administrators and supervisors of vocational work recognize and understand its value. Statistics on the number of eye accidents which have occurred in these locations and amounts of injury awards are important in demonstrating the need.

9. Information service on eye problems. Professional groups turn to the agency if its staff is thoroughly informed and generously offers advice and guidance in finding appropriate resources for children and adults with visual handicaps. For example, teachers may not know about rehabilitation services available to the partially seeing student finishing high school. In organizations and industries where there is no medical or nursing staff the personnel manager may not know where to refer an employee with eye trouble. To promote this and other services of the agency a periodic bulletin might be developed.

Information as to the status of legislation needed to control hazards to eyesight and promote eye health should be included in this service.

10. Campaign for early case-finding and correction of crossed eyes and other serious eye problems of young children. Through radio, television, pamphlets and talks to various community groups the public should be informed. Material should be distributed to pediatricians and family doctors. Demonstrations of vision testing of preschool children help to alert many professional groups and parents to the problem.

11. Campaign to prevent eye accidents among children in the home and at play. Educational material such as leaflets and posters should be provided to parents, teachers and playground supervisors.

12. Sight conservation in industry. Information on the importance of eye safeguards, vision tests and placement of workers in jobs suited to their visual ability should be disseminated to personnel and safety directors.

Since there is so much work to be accomplished in blindness prevention and since volunteer agency budgets are limited, an activity may be undertaken on a demonstration basis until it can be appropriately turned over to a governmental department which has primary responsibility for the service.

The problems of prevention of blindness are manifold. Their solution involves a variety of methods and the interest and cooperative efforts of many community agencies and professional groups. The active assistance of civic-minded organizations such as Delta Gamma Fraternity, Knights Templar, Lions, American Legion, Kiwanis, parent teacher associations, women's clubs and similar citizen groups helps greatly in spreading the message and providing the community services needed for eye health.

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#### READING GUIDE FOR THE PARTIALLY SEEING

*The Educational Reading Guide for the Partially Seeing*, compiled by Lorraine Galisdorfer of Kenmore, N. Y., and first issued in 1950, has been brought up to date in Supplement D (1955-1959). Copies of the complete *Guide* may be secured from Henry Stewart, Inc., 210 Ellicott Street, Buffalo 3, N. Y. Price \$3.00.

#### DRIVERS' HEALTH STUDY

A study to determine the effect of health on traffic accidents is about to be undertaken by the Connecticut State Health and Motor Vehicle Departments, in cooperation with the U.S. Public Health Service. The frequently reported fact that 15 per cent of the drivers have 90 per cent of the accidents has led traffic authorities to delve more deeply into the factors of accident proneness.

The Connecticut investigation has as its aim the establishment of standards of physical and mental fitness for safe operation of motor vehicles. The Public Health Service will lend to the state a mobile screening laboratory complete with medical and laboratory personnel to interview as many as 20,000 motorists each year. The project will begin this fall, with plans to request new funds and extend the research in a year.

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#### STORY OF GENERAL MAAS

A feature article in the *Saturday Evening Post* of September 5 offers great inspiration and encouragement to the physically handicapped. Melvin J. Maas, retired Marine Corps general and ex-congressman who became blind in the middle of a busy career, tells how he made the difficult transition to a strange new life.

As chairman of the President's Committee on Employment of the Physically Handicapped General Maas now travels alone throughout the country, usually by air, making three or four speeches a week before all types of luncheon and dinner meetings. The committee endeavors to educate employers in the practical advantages of hiring the handicapped. General Maas reports that about 7,500,000 such persons are now employed in the U.S. and another 2,000,000 are known to be employable.

# School Services for Partially Seeing and Blind Children in Urban Areas

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A study of 106 large cities reveals considerable variation in services provided, and the need for strengthening the program in certain areas.\*

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CHILDREN with significant visual impairment represent one of the groups in the United States for whom special education was first provided. In 1909 New York City established public school classes for the blind and partially seeing. Boston soon followed in 1913, and then other cities such as Cleveland, Chicago and Milwaukee.<sup>1</sup>

Thus, interest in this area of special education is of long duration.

As part of a general study of school services provided for handicapped children in urban areas of the United States in 1958 specific information was requested on services for the partially seeing and blind. This report presents the data on these two groups of children.

## Method of Study

During the winter of 1958 a questionnaire was sent to the health officers and superintendents of schools in each of the 106 cities having a population of

100,000 or more according to the 1950 census. The questionnaire contained items on types and numbers of handicapped children cared for in the public school system; age of admission; kinds of facilities provided; presence of established criteria for special educational placement, and agency responsible for their establishment; method of review of applications for placement, personnel engaged in such review, frequency of review; organization of special education within the system; method of financing and costs of education of handicapped children; and provision of transportation and attendant service.

## Population Covered

According to the 1950 census, the 106 cities had a combined total population of 44,311,716 or 29.4 per cent of the total of our country, and a combined school enrolment of children aged five through 17 years of 7,192,100 or 28.4 per cent of the total. Ninety-eight of the 106 cities responded and these had a combined total population of 41,686,921 (94 per cent) and a combined school enrolment of children aged five through 17 years of 6,840,105 (95 per cent). All except seven of the

\* A study conducted by the Maternal and Child Health Faculty, School of Public Health, University of Minnesota.

Since this article was written Dr. Wallace has joined the Childrens Bureau, U. S. Department of Health, Education, and Welfare, Washington, D.C. as Medical Officer in Charge of Professional Training.



98 respondent urban communities provide some school services for the partially seeing, and all except 25 provide for the blind.

#### **Age of Admission**

It is becoming more accepted that handicapped children may benefit from school attendance during the preschool period. Therefore the age of admission to school has considerable importance. Seventeen of the school systems admit blind children under the age of five, and eleven admit the partially seeing. On the other hand, 31 delay admission of blind beyond age five; 53 do so for partially seeing.

#### **Type of Placement**

The type of educational placement provided, and, of course, the quality of the service within it constitute one of the important aspects of the care of handicapped children. To state it simply, the more services and the more comprehensive the services provided in an ambulatory school program (either special class or day school) the less will be the need for a special residential school, home instruction, or instruction in a hospital or convalescent home.

Answers to these parts of the questionnaire were not complete, but it is possible to present some facts. For example, the most frequent type of educational plan for both blind and partially seeing is a special class (34 and 42 communities respectively). Placement in regular class is the next most frequent method, followed by placement in a special day school. It is gratifying to note that only two communities reported a residential school as the sole type of placement for blind children.

A question was asked concerning the numbers of children in these various types of placement. Again, this question was not fully answered by all reporting communities, but it is evident that most of the partially seeing are in special classes, followed by regular class and special day school. Most of the blind are in special classes, followed by special day school and regular classes.

#### **Method of Placement**

Ninety-one of the 98 reporting systems (93 per cent) stated that they had criteria established for the educational placement of all types of handicapped children. Of the others, one each had established criteria for cerebral palsy, for the blind, and for mental retardation; four did not answer this question.

In almost half of the public school systems responsibility for establishing criteria for placement has been assumed by the local government, predominantly the board of education. In slightly more than one-quarter, it has been assumed by the state, predominantly the state department of education. The participation of the health department, either local or state, is very small. Where the individual disciplines were listed under local government, there is medical participation in less than half of the methods.

In half of the systems the board of education alone reviews the applications for special placement. In no instance is such review done by the department of health alone. In approximately one-fifth of the systems the review is carried on jointly by the two departments—education and health. In only three systems is the

recommendation of the practicing physician acted upon without any agency review.

The number of professional personnel reviewing applications for placement ranged from one to 12; the most frequent number reported was six, in 18 systems. It is gratifying to learn that in most systems more than one professional person is responsible for

the review of applications. The type of person selected for this task is of the utmost importance. As indicated in Table I, those most frequently designated are the psychologist and the school administrator. The nurse and the teacher participate in about one-half of the systems, the social worker and the school counselor in about one-third. There is limited participation by such personnel as the director of special education and the vocational counselor.

In all school systems except 14 there was some type of medical participation in the review. It is surprising to find infrequent participation by such medical specialists as the ophthalmologist, pediatrician, otologist, orthopedist and cardiologist (Table I).

Under accepted procedure it is essential that there be a careful review of all handicapped children, not only before placement but also periodically during it, and prior to withdrawal. The questionnaire asked for information on all three aspects. Ninety-six per cent of the school systems indicated that they review all applications prior to placement, 85 per cent do so periodically during placement, and 70 per cent prior to withdrawal. Forty-five per cent of the systems review children in special day class at least once a year; 39 per cent review those on home instruction at least once a year; 32 per cent review those in regular class at least once a year; 31 per cent review those in special day school at least once a year; 17 per cent review those in hospitals and convalescent homes at least once a year; and 9 per cent review those in special residential schools at least once a year. The range of frequency of review varied from once

**TABLE I**  
**Type of Personnel Participating in Review of Applications for All Types of Handicapped Children**

Type of Person	No. of Schools
Psychologist.....	87
Administrator.....	87
Nurse.....	57
Teacher.....	53
Social Worker.....	34
School Counselor.....	33
Director of Special Education.....	16
Vocational Counselor.....	8
<b>Medical Participants</b>	
Physician—type not specified.....	33
Orthopedist.....	19
Otologist.....	17
Family physician.....	16
Ophthalmologist.....	16
Pediatrician.....	12
School physician.....	13
Psychiatrist.....	9
Various medical specialists.....	8
Medical director.....	3
Neurologist.....	4
Cardiologist.....	3
Miscellaneous.....	4*
Miscellaneous.....	4**

\* M.D. in board of education clinics; plastic surgeon; epilepsy; health department

\*\* Assistant superintendent of schools; speech therapist; consultant in guidance; director of health service

**TABLE II**  
**Type of Personnel Engaged in**  
**Team Review of Children**

Type of Personnel	Partially Seeing	Blind
<b>Non-Medical</b>		
Psychologist.....	15	13
Nurse.....	6	4
Teacher.....	5	5
Director of special education.....	5	4
Administrator.....	4	3
Social Worker.....	1	1
Counselor.....	1	1
Speech therapist....	1	..
<b>Medical</b>		
Type not specified..	16	13
Ophthalmologist....	14	11
School M.D.....	2	2
Pediatrician.....	1	..
Health Department M.D.....	1	..
<b>Community Facility Used</b>		
Consultation clinic..	1	1
State commission for blind.....	1	1
<b>Miscellaneous</b>		
Director school health.....	1	1

a week (in one special residential school and on home instruction) to a complete lack of review for children on home instruction in two school systems.

Because it is recognized that "paper review" may not provide as complete a picture of the child, his progress and his needs as when he and his family are seen personally, the questionnaire contained an inquiry regarding the provision of a team, either from the board of education or the department of health, who personally see and evaluate partially seeing and blind

children. For the partially seeing 39 per cent of the communities reported that they did provide such a service, although only 26 provide more than one person. For the blind, 31 per cent reported such service although only 19 per cent provide more than one person. A psychologist, ophthalmologist and a physician (whose type was not specified) were most likely to be members of the team. Community facilities were rarely used (Table II). In three communities both partially seeing and blind children received a team equivalent without any medical participation.

In approximately two-thirds of the public school systems there is a department of special education with its own director; in one-fifth special education is a part of another department of the system.

#### **Financial Aspects**

The source of financing the education of handicapped children is predominantly a combination of local and state tax funds (86 out of 98 communities). There is a tremendous variation in the proportion of local-state participation, the most frequent method being equal sharing of costs by city and state. The most frequent method of allocating funds is on a per pupil basis; a per teacher or a per class basis is used less frequently.

Information requested concerning the cost of educating partially seeing and blind children in the various types of placement was not readily available, and was reported by only a small number of communities.

#### **Transportation Provided**

Of the 98 communities reporting 61 provide transportation of partially

seeing children to and from school and 37 do not. Eighteen provide attendant service during transportation.

For the blind group, 50 of the 98 communities provide transportation and 48 do not. Eighteen provide attendant service.

#### **Summary of Findings**

The findings of the survey may be summarized as follows:

All communities except seven provide school services for partially seeing children, and all except 25 do so for the blind.

There is some evidence of delay in admission of both partially seeing and blind, and only a small per cent of communities admit either group under the age of five.

The most frequent type of educational placement for both groups is the special class, followed by regular class and special day school.

While most systems reported that they had established criteria for special placement of all types of handicapped children, this was usually done by state or local education departments, with little participation from health departments.

Most systems have a team reviewing applications for special placement, with the psychologist and the school administrator as the most frequent members. The teacher and the nurse participated in about one-half of the systems; the social worker and the school counselor in about one-third. There was little participation by ophthalmologists.

A team personally saw and reviewed partially seeing children in one-quarter of the systems, and blind children in one-fifth. Community facilities were rarely used.

Slightly more than half of the communities provided transportation for these groups to and from school, and only one-sixth provided attendant service.

Some differences exist in relation to the two groups. Blind children are more likely to be admitted to school under age five than are the partially seeing. On the other hand, a team of professional personnel is more likely to see and personally evaluate partially seeing children; the team is more likely to be larger in number, and to contain more disciplines. Transportation is more likely to be provided for the partially seeing. These facts with respect to the partially seeing are surprising.

The data on the number of children in residential institutions are incomplete, since some urban school systems commented in their replies that their states provided such institutions for the blind and that some children from their local communities were placed there. However, the number of children in these state schools frequently was not given.

It is commendable that most school systems have criteria for special placement of partially seeing and blind, but it is regrettable that there has been so little participation by health departments and ophthalmologists in the establishment of such criteria and in the review of applications. Also, it was surprising to find existing community facilities so rarely used.

The need for careful development of criteria for placement of children with visual impairment and for team review of such children is demonstrated by the results of a study<sup>2</sup> in one community. Careful review of 149 children in sight conservation classes indicated

that 55 were inappropriately placed. Of 33 children in braille classes careful review indicated that three were inappropriately placed. This study of the community's official program for handicapped children, made by a consulting ophthalmologist and a public health nursing consultant, consisted of a careful review of the children's school health records; discussion with the principal, classroom teacher and public health nurse in the school; and, when indicated, ophthalmological examination of the child.

### Strengthening the Program

From this study of the larger urban areas certain suggestions may be offered to assist in strengthening the care of partially seeing and blind children of school age:

1. Joint participation by education and health personnel, including ophthalmologists, in the establishment of criteria for special placement of both groups.

2. Joint review of placement applications by education and health personnel, including ophthalmologists. Such review should be done prior to placement, periodically (at least once a year) during placement, and prior to withdrawal. The multidisciplinary approach is desirable, with teacher, nurse, social worker, psychologist, ophthalmologist and school counselor included on the team.

3. Extension of this team approach to all partially seeing and blind children in the community—those in any type of placement (regular or special class, special day school, special residential school, and home instruction).

4. Provision of opportunity for each blind child, and perhaps for each partially seeing child, to be admitted to

school during preschool age. Certainly no child should have his admission delayed beyond the usual age of admission of "normal" children.

5. Development of school services for the partially seeing and blind, so that these children may be able to live in their own homes and attend school in their own communities.

6. Provision of transportation and attendant service.

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2. Wallace, Helen M.; Schachat, Walter S.; Palmer, Myra; Hoenig, Leah; Lossef, Samuel; and Rich, Herbert. A Study of New York's Visually Handicapped Children. *The Sight-Saving Review*, Vol. 24, No. 4, Winter 1954. p. 217-225.

### RECORDED EDITION OF NEW OUTLOOK

The *New Outlook for the Blind* is now available in a recorded edition, on 16-2/3 rpm records. This edition carries an annotated listing of new talking books, as a supplement, replacing the former quarterly *Talking Book Topics*.

Issued ten months a year, the new edition will appear each publication month concurrently with the inkprint and braille editions. The subscription price is \$5, payable to the publisher, American Foundation for the Blind, 15 West 16th Street, New York 11. Subscriptions are available to anyone, regardless of visual consideration.

### CORRECTION

A correction should be noted in the article on "Volunteer Vision Screening in South Carolina" by Mary Louise Free, R.N., which appeared in the Summer Issue of *Sight-Saving Review*. The number of school-age children screened during 1958 in nine counties was 13,406. The figure was incorrectly given as 3,406.

## NOTES AND COMMENT

### • Medal to Dr. Rand

Gertrude Rand, Ph.D., research associate emeritus at Columbia University, was presented the Edgar D. Tillyer Medal of the American Optical Society at its annual meeting, held in New York in April. The award, established in 1953, is made biennially "to a person who shall have performed distinguished work in the field of vision, including (but not limited to) the optics, physiology, anatomy or psychology of the visual system."

In his citation, Kenneth N. Ogle, Ph.D. of the Mayo Clinic said that Dr. Rand had been chosen because of her accomplishments in the field of visual physiology, a subject which was in its infancy when she began her career. As a graduate student at Bryn Mawr College she worked under Dr. Clarence Ferree, her research counselor, whom she married in 1918. They worked as a research team until Dr. Ferree's death in 1942, publishing more than 100 papers on a wide range of subjects, and developing the Ferree-Rand perimeter.

Beginning with her doctoral thesis on the sensitivity of the retina to color Dr. Rand made the intensive studies of color vision, illumination and color blindness which established her as an authority. In 1928 she became associate professor at the Wilmer Ophthalmological Institute of the Johns Hopkins University School of Medicine. After Dr. Ferree's death and until her recent retirement, Dr. Rand was research associate in ophthalmology in the Knapp Foundation of the Columbia University College of Physicians and Surgeons, teaching

optics and the physiology of vision to the residents in ophthalmology.

Dr. Rand was the first woman to be elected to membership in the Illuminating Engineering Society, of which she is a fellow. In 1951 she was made an honorary fellow of the American Academy of Ophthalmology and Otolaryngology—a rare tribute to one without a medical degree. She is a consultant of the National Society for the Prevention of Blindness, and an active member of the Inter-Society Color Council.

Working with the late LeGrand Hardy, M.D. and M. Catherine Rittler, Dr. Rand helped develop the pseudoisochromatic test for color blindness known as the AO—HRR test, widely used today in schools and industry for rapid detection of color deficiencies.

### • Infirmary Thrives

The Massachusetts Eye and Ear Infirmary, founded in 1824, is so venerable and famous that it has adopted a policy of curbing expansion in order to remain "compact and efficient," in the phrase of the 1958 report. Streamlining of many functions is afforded by close cooperation with the Massachusetts General Hospital, which adjoins the Infirmary. Though the patient load is restricted by lack of space, there were 43,880 patient visits to the Eye Clinic last year, and surgery was given more than 4,000 persons.

Edwin B. Dunphy, M.D., chief of ophthalmology, stresses the importance of special services: orthoptics, electroretinography, glaucoma consultation and the retina service.



At the Howe Laboratory important research continues on lens metabolism, ocular hydrodynamics and glaucoma, and other problems. An independent research project in retrolental fibroplasia is entering its fifth year under Leona Zacharias, M.D. Dr. Dunphy remarks that greater understanding of the mechanism of RLF and many disorders of the eye is already resulting from some of the studies going on at the Howe Laboratory.

#### • Alabama Lions Active

During the last five years the work of the Alabama Sight Conservation Association sponsored by 164 Lions Clubs of the state has almost tripled. This project is unique in that it covers the entire state, and offers needy people of all ages complete ophthalmic care, including hospitalization, optical aids and medicines. Since its organization in 1944 Alabama Sight has spent nearly a million dollars in its program. The ophthalmologists contribute their services, and hospitals, opticians and pharmacists cut their charges to a minimum.

Patients accepted by Alabama Sight may be examined in any one of seven towns; at eye clinics in Birmingham, Tuskegee Institute and Gadsden, and in private offices of ophthalmologists in Montgomery, Mobile, Tuscaloosa and Selma. During 1957-1958, 1,505 new patients were registered, and 544 were hospitalized.

Aside from this medical work, Alabama Sight helps to maintain a class for partially seeing children in Birmingham, and has recently started a school vision screening program in two counties. An unusual feature of Alabama Sight is its emergency service, which last year gave immediate

help to 159 persons with eye injuries, acute glaucoma, detached retina, malignant tumor and similar cases. The office in Birmingham maintains a 24-hour telephone service to handle emergencies reported by the statewide network of Lions Clubs.

#### • Report on N. Y. Society

The Sight Conservation Society of Northeastern New York, with headquarters in Schenectady, reveals a vigorous growth in its report for the year ending in April, 1959. The eye cornea service has been one of the chief activities and nearly a thousand donor eyes have been delivered to hospitals since the Society was founded in 1952. Of the 213 eyes delivered in the last year, 75 were used for corneal transplants, 49 for vitreous implant, 31 for vitreous storage, and the remainder for research. The bulk of the deliveries was made to hospitals in Philadelphia and New York City. The Society now has pledges for 11,207 eyes.

Another activity of the Society is preschool vision screening, which is progressing in Schenectady, with about a thousand children tested so far. Referrals for eye defects have run about five per cent. Plans are under way to conduct glaucoma screening projects in the area.

At the annual meeting held in Troy on April 16 Dr. William McCarty, an ophthalmologist of that city, was elected president.

#### • Glaucoma Clinics Multiply

The great success of the bimonthly glaucoma detection clinic in Brookline, Massachusetts, which completed its first year in April, has inspired similar projects in other towns of the

state. The pattern for these rather unique clinics is joint sponsorship by the local Lions Club, the city department of health, and the Massachusetts Division of the Blind.

In Brookline these three agencies have worked closely together, supervising a staff of three ophthalmologists, three optometrists, several nurses, and volunteer Lions Club members and their wives. The clinics are held from four-thirty to eight-thirty the first and third Mondays of the month, and free examinations are given all citizens over the age of 40. The examinations include a history, tests for distance vision, visual fields, ophthalmoscopy, and tonometry.

Of the 2,075 persons examined during the year, 455 were referred for various eye conditions, including 163 cases of elevated intraocular tension. A positive diagnosis of glaucoma was subsequently made in 40 cases, of which 28 had been unsuspected, and 74 other possible cases of glaucoma are still under study. Confirmation of other eye troubles was made in 139 cases, which included cataract, retinitis, retinal detachment, and malignancy, and diagnosis is pending in 214 cases.

John G. McCormick, health educator of the Brookline Health Department, writes that the public response has been most enthusiastic. Those attending the clinics have filled out forms asking for suggestions and comments, which were unanimous in praising the personnel and the service; many calling the clinic "a wonderful opportunity."

Similar clinics have already been started in Belmont and Needham, and are planned for Wellesley, Dorchester, Arlington, Medfield and Randolph.

#### • Rural Kansans Screened

Five clinics are being held in rural areas of Kansas during 1959 to screen persons over 35 for glaucoma. The tests are given by the division of services for the blind of the state department of social welfare, which has emphasized preventive work. The rural clinics were inaugurated in April 1958, and enlist the cooperation of county welfare departments and volunteer ophthalmologists. An educational program about glaucoma is part of this new activity, according to *The Observer* of January 1959, organ of the division.

#### • Eye Care in Philadelphia

The remarkably complete eye health program of the Philadelphia public schools is reflected in the May 1959 report of the department of ophthalmology organized 14 years ago by Ralph C. Lanciano, M.D. and Edmund B. Spaeth, M.D., who continues to serve as ophthalmologist-in-charge and consulting ophthalmologist. They are assisted by four clinic ophthalmologists and six registered nurses, and cooperate closely with the hospital ophthalmology departments.

Since 1945 the school physicians have made 1,212,222 eye examinations. Their standards of referral for further study include any abnormalities of the external eye, Snellen readings of 20/30 or less in one or both eyes with and without correction, history of recent head trauma, and school physician or nurse observation. Based on these criteria, they have found 136,055 eye defects (11 per cent of total examined).

A follow-up record of 94 per cent is noteworthy. Nearly half of the chil-



At the glaucoma exhibit at Midwinter Fair, Brawley, California, Mrs. Burnetta Downing, executive director of NSPB California Chapter, happily accepts a contribution. Money was collected at a luncheon meeting of Brawley Lions Club. Presenting it are Charles C. Hancock of Imperial, left, and E. de la Vega of El Centro.

dren were seen by private specialists; the 64,876 others were re-examined by eye clinics of the Board of Education, the Department of Health and the city hospitals. Children with low vision were given special examinations; 11 were assigned to braille classes and 437 to low-vision classes.

An eye safety program was organized during the 1957-58 school term. The previous year 176 eye injuries were reported by the various schools, and 10 cases occurred in the vocational shops, in which 6,000 pupils are enrolled. About a thousand pairs of protective goggles, with and without correction, have been issued to students in those trades where injury potential is highest. The safety program is regarded as an essential development of the preventive policies carried out in the schools. Another is the safeguarding of children who have useful vision in only one eye, high myopia or other serious conditions by

excluding them from any athletic or physical training activity which might endanger the eyes.

The department of ophthalmology conducts in-service training courses for school physicians and nurses and for teachers wishing to specialize in the education of the visually handicapped. Eye health talks are given to parent-teacher associations, school counselors and psychologists and nurse-coordinators.

Ruth H. Weaver, M.D. is director of the division of school medical services of which the department of ophthalmology forms a part.

#### • NSPB at Brawley Fair

Great interest was displayed in the glaucoma exhibit held during the Midwinter Fair at Brawley, California, under the joint sponsorship of the Imperial County Medical Society and the California Chapter of the National Society for the Prevention of

Blindness. Burnetta Downing, R.N., executive director of the Chapter, was in charge of the booth for four of the 10 days of the fair, explaining to visitors the value of early diagnosis of glaucoma, and how tonometry is done.

The Lions Club of Brawley took up a collection for the Chapter during a luncheon meeting, and presented the gift to Mrs. Downing. Such warm response was displayed to the NSPB exhibit that local ophthalmologists have urged the California Chapter to handle a prevention of blindness exhibit for the entire period of the fair in 1960.

#### • Homer Folks Honored

As the only remaining pioneer of social work in this country, Homer Folks was feted at a meeting of the Social Work Recruiting Committee of Greater New York at the Biltmore Hotel on May 14. Mr. Folks, who is now 92, was one of the illustrious group which included Jane Addams, Clara Barton, Robert de Forest and John Lovejoy Elliott. These leaders were portrayed in a pageant staged by prominent social workers of today who are trying to attract superior young people to the profession.

Mr. Folks, who sat in the audience, was warmly applauded by the large crowd attending the meeting.

Since its founding in 1908 the National Society for the Prevention of Blindness has had as honorary vice-presidents two great Americans: Helen Keller and Homer Folks.

#### • RLF in Oregon

The severity of the blindness which afflicts children who are victims of retrolental fibroplasia (RLF) is re-

flected in an analysis by Everett E. Wilcox, superintendent of the Oregon State School for the Blind, which appears in *The New Outlook for the Blind* of May 1959. The table shows a drastic change in useful vision as children blinded by RLF in infancy became old enough to enter the school. In January 1952, 29 per cent of the total enrolment had no useful vision; by January 1959, 66 per cent of all the pupils were totally blind, and 79 per cent of those in kindergarten to third grade.

This situation parallels that reported by the California School for the Blind, where 62 per cent of the younger pupils had useful vision in 1952, dropping to 22 per cent in 1958.

#### • Appointment of Dr. Bailey

Surgeon General Leroy E. Burney of the U. S. Public Health Service has announced the appointment of Dr. Pearce Bailey, director of the National Institute of Neurological Diseases and Blindness for the past eight years, as director of the Institute's new International Neurological Research Programs.

Dr. Richard L. Masland, now assistant director, will succeed Dr. Bailey as director of the Institute, one of the Public Health Service's seven National Institutes of Health.

In his new post Dr. Bailey will encourage the international exchange and coordination of scientific knowledge relating to neurologic and sensory disorders. He will serve in a liaison capacity with the World Federation of Neurology, an international professional organization with headquarters in Antwerp, Belgium, and as an adviser to the National Institutes of

Health on international neurological developments.

Dr. Masland, who has served as assistant director of the National Institute of Neurology and Blindness for the past two years, has among other responsibilities organized the Institute's extensive research study relating to the neurological disorders of the newborn in which 16 hospitals throughout the nation are collaborating.

A neurologist and a psychiatrist, Dr. Masland received his M.D. degree at the University of Pennsylvania School of Medicine. Before coming to NINDB, he was professor and head of the department of neurology at the Bowman Gray School of Medicine, research director for the National Association for Retarded Children, and director of the department of physiology of the U. S. Army's School of Aviation Medicine.

#### • Guild Fellowships

Six young physicians who are just beginning their residency training in ophthalmology have been announced as the 1959 winners of fellowships provided by the Ophthalmology Scholarship Fund of the Guild of Prescription Opticians of America, Inc.

This year's fellowship recipients and the institution in which each will serve his residency are: Morgan R. Adams, M.D., of Louisville, at the State University of Iowa Hospitals; Alvin H. Brackup, M.D., of Brooklyn, at the New York Eye and Ear Infirmary; John A. Eisenschmid, M.D., of Pittsford, N. Y., at the University of Rochester School of Medicine; Gordon D. Howden, M.D., of Saskatoon, Saskatchewan, at the University of Saskatchewan; Joseph M. Scott, M.D., of Memphis, at the Memphis Eye, Ear,

Nose and Throat Hospital; Vernon G. Wong, M.D., of Philadelphia, at the Graduate Hospital of the University of Pennsylvania.

The selections, which were made by a committee of ophthalmologists, were announced by the Guild's president, William T. Heimlich of Ithaca, New York.

Organized four years ago in support of medical eye care, the program provides eighteen fellowships for residents in ophthalmology on a nation-wide basis. Each fellowship is for a total of \$1,800 payable in monthly stipends over the period of the three-year residency.

#### • Pan American Congress

Space exploration as it may affect the eyes will lead off the scientific program of the Sixth Pan American Congress of Ophthalmology, to be held in Caracas, Venezuela, January 31-February 6, 1960.

The tentative program, announced by Dr. Brittain F. Payne, New York, president of the Pan American Association of Ophthalmology, promises discussions on subjects ranging from genetics to autopsies, presented in symposia, round tables and free papers in two concurrent sessions throughout the week. Simultaneous translation of scientific papers is planned.

Brig. Gen. Victor A. Byrnes, U. S. Air Force, Washington, D. C., and Dr. David Schoch, Chicago, will preside at the session on space ophthalmology. Speakers who will consider the possible effects on the eye of various conditions in space flight will include: Capt. James L. Fuelling, U. S. Naval Air Station, Pensacola; Major William T. Sallee, U. S. Air Force; Drs. Albert D. Ruedemann, Jr., De-

troit; Walter H. Benedict, Knoxville, Tenn., and Dr. Schoch.

In a symposium centered upon hereditary conditions of the head and neck that may affect the eyes Dr. Harold F. Falls, University of Michigan Medical School, Ann Arbor, Mich., and Dr. Guillermo Pico, Santurce, Puerto Rico, will be joint chairmen, and both will present papers.

Recent interest in the use of alpha chymotrypsin in the management of cataract is the basis of another symposium at which Drs. Derrick Vail, Chicago, and Olga Ferrer, Havana, Cuba, are scheduled to preside. Contributors to the symposium will include: Drs. Djordje Lukie M., University of the Andes, Merida, Venezuela; A. Benedict Rizzuti, Brooklyn, N. Y.; and Louis J. Girard, Houston, Texas. In another session Dr. Joaquin Barraquer, Barcelona, Spain, will present a paper on this subject.

Eye conditions that pose special problems in certain regions form the subject of a symposium under the chairmanship of Dr. Ida Mann of Australia, and Dr. Rodolfo Hernandez Miliani of Caracas. Dr. Mann has devoted many years of study to regional ophthalmology, having made extensive surveys of the prevalence of trachoma in Western Australia for the World Health Organization. She will discuss the value of such studies. Other speakers will be Drs. Guillermo Pico on causes of blindness in Puerto Rico, and J. Winston Duggan on phlyctenulosis in the regions of Northwest Canada.

Strabismus is to be the subject of both a symposium and a round table discussion. Also scheduled are sessions on retinal detachment, glaucoma and various advances in ocular surgery.

Dr. Conrad Berens, New York, will preside at a program on the prevention of blindness.

Hotel and travel arrangements should be made through Dr. William L. Benedict, 15 Second Street, S. W., Rochester, Minn., chairman of the committee on transportation. Headquarters for the congress will be the Hotel Tamanaco.

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### TRIBUTE TO JEAN S. ROBINSON

In memory of its beloved past president, Jean S. Robinson, the American Association of Orthoptic Technicians has made a contribution to the National Society for the Prevention of Blindness. Miss Robinson, pioneer of orthoptics in the South, died in Memphis on November 30, 1957.

When Miss Robinson began her career in 1934 as orthoptist with the late Dr. E. C. Ellett and associate Dr. Ralph Rychener in Memphis, she was the sole orthoptic technician in the South. For more than 20 years she worked to retrain strabismic children. Personally attractive, with the right combination of tact and firmness, she had great success with her patients. Her devotion to family and friends and interest in the arts have made her warmly remembered in the city.

From 1941 on Miss Robinson was a leader in the Association of Orthoptic Technicians, serving first as secretary-treasurer and then as president and an associate member of the American Orthoptic Council. In 1951 she was stricken with polio, but managed to get to the annual orthoptic meeting in Chicago, presiding as president from a wheel chair. She continued all possible activities in the Association until her



death, earning, as President Frances Fowler expressed it, the members' "earnest respect for a beloved leader."

### MOACYR E. ALVARO, M.D.

Dr. Moacyr E. Alvaro, distinguished Brazilian ophthalmologist, died in Sao Paulo Hospital on July 19, at the age of 59. He was professor of ophthalmology at the Paulista School of Medicine, was a founder and former president of the Pan American Association of Ophthalmology. He had served also as president of the Ophthalmological Study Center in Sao Paulo and as secretary general of the National Committee for the Prevention of Blindness in Brazil.

Born in Santos, Sao Paulo, Dr. Alvaro received his medical degree at Rio de Janeiro Medical School in 1922 and took postgraduate work at the University of Vienna. He organized congresses of eye specialists, started campaigns for the prevention of blindness, and helped to found a glaucoma clinic in Sao Paulo.

In 1930 Dr. Alvaro was named director of municipal hygiene in Sao Paulo. He organized the annual postgraduate course in ophthalmology at the Paulista School of Medicine in 1937 and established permanent postgraduate courses in ophthalmology in 1941.

He was a fellow of the American College of Surgeons and a member of the Brazilian College of Surgeons and the National Academy of Medicine of Brazil.

Dr. Alvaro worked closely with the National Society for many years, frequently attending its meetings, and serving with distinction on a number of special advisory committees.

### BERNARD SAMUELS, M.D.

Dr. Bernard Samuels, professor emeritus of ophthalmology at Cornell University Medical College and a member of the National Society's board of directors from 1935 to 1959, died in Wiscasset, Maine, on July 26. He was 80 years old.

Dr. Samuels was appointed clinical instructor of ophthalmology at Cornell Medical College in 1914, and was a full professor from 1927 until his retirement in 1942. He served in the Army Medical Corps in World War I.

In 1930 he became a full surgeon at New York Eye and Ear Infirmary and from then until 1946 headed one of the infirmary's six eye clinics, serving also as a pathologist. In 1956 he was instrumental in establishing the infirmary's Institute of Ophthalmology of the Americas.

Born at Front Royal, Va., Dr. Samuels received his medical degree from Jefferson College in Philadelphia and did four years of postgraduate work in Vienna, Prague and Berlin. He achieved distinction as a teacher, particularly in histopathology, and was co-author of "Histopathology of the Eye," published in 1952. He was a past first vice-president of the American Academy of Ophthalmology and belonged to numerous professional organizations in whose programs he maintained an active interest.

Dr. Samuels was a humanitarian who unselfishly served many good causes, and his contribution to the work of the National Society was invaluable. He was a member of its executive committee from 1949 to 1959, and upon his resignation this year was made an honorary member of the Society.

## AROUND THE WORLD

### GREAT BRITAIN

**M.D.'s and Socialized Medicine.** A long struggle is going on to establish high medical standards in the ophthalmic sections of the National Health Service. The 1958-59 report of the Faculty of Ophthalmologists, composed of the 487 members of the profession, reveals the difficulty of keeping medicine in the eye health picture. The report states: "There is too much official preoccupation with political and financial considerations, instead of with long term views of the development of the ophthalmic services."

The eye health of school children was the responsibility of medical specialists before the National Health Service was introduced. Then much of the work was transferred to sight-testing opticians, limited to refraction and prescription of glasses. Thus serious conditions like strabismus have been neglected. The Faculty believes, says the report, "that ideally the whole range of ophthalmic work for school children including refraction should be conducted solely by medical personnel with the necessary trained nursing and orthoptist auxiliaries."

Under pressure, the Ministry of Health merged the school eye services with the Hospital Eye Service to bring the children under medical supervision. But this recent move has been only partly carried out in actual practice, says the report. Since three-fourths of the entire population of England receive optical service from opticians, largely at state expense, the Faculty is now trying to cooperate more closely with opticians, giving them training in recognizing eye con-

ditions which should be referred to an ophthalmologist.

### INDIA

**Mobile Medicine.** Across 300,000 square miles of Southern India, under a strong sun which makes cataracts a special problem, two million people can obtain highly skilled ophthalmological care. Since 1943 Dr. Muragapa Chenavirapa Modi has traveled to his patients with his unique mobile hospital unit, which is provided with all regular examination and operating equipment, besides its own electric generator.

Part of Dr. Modi's story is told in *The New Yorker* of June 27, 1959. He first began practicing in a private hospital in Bombay. His patients came great distances from several states to see him. He found that poverty forced them to make great sacrifices; sometimes they sold their cows and even their houses to pay the bus fare. This dedicated man decided that the doctor would go to his patients, even at the personal sacrifice of separation from his wife and child for long periods of time. The service is paid for by the Indian government and some private contributions.

Dr. Modi sets up camp for two or three days in a village, turns the schoolhouse into a temporary hospital, and performs the operations which can be done with local anesthetic. Later he treats the non-surgical cases. He has set up an amazingly efficient routine, which has enabled him to remove as many as 510 cataracts in nine hours, a record even for one of his unusual skill.

Dr. Modi's future plans include the establishment of a medical center and graduate school at his headquarters in Davangere in South India. He comes to the United States periodically to visit hospitals and demonstrate his operating techniques; and he has been a welcome visitor to the headquarters of the National Society.

#### JAPAN

*Blueprints for Special Education.* Plans for a modern system of schools include facilities for partially seeing children, who, like all handicapped Japanese, have traditionally been cared for at home. A study of the modernization of Japan's schools has been published by the United States Department of Health, Education, and Welfare as one of a series on education in various countries.

In 1952 a special education section was set up in the ministry of education to deal with handicapped children. Of the estimated 11,000 blind children of school age, about 9,000 attend the special schools established in each prefecture in 1941. The 13,000 partially seeing children are gradually being cared for. Because of lack of trained teachers, materials and transportation, special education must develop slowly, and at present most of the special classes in the public schools are devoted to crippled and mentally subnormal pupils.

#### SPAIN

*Trachoma Fought on Coast.* "Operation Total" is the name given the anti-trachoma drive now being conducted on the Andalusian coast by the Spanish government in partnership with the World Health Organization and UNICEF. In towns where the

incidence of trachoma is over 70 per cent every inhabitant is given treatment, whether or not he shows symptoms of active infection. In La Mamola, where this work began, 1,000 of the 1,200 inhabitants had trachoma. Systematic treatment with antibiotic ointment reduced the incidence to three per cent by the next year.

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#### POST PAN-AMERICAN CONGRESS MEETING IN NEW YORK

The Institute of Ophthalmology of the Americas will conduct a Post Pan-American Congress Meeting at the New York Eye and Ear Infirmary February 9 to 17, 1960. Each symposium will be composed of two Latin-American ophthalmologists and two Infirmary staff members. Subjects for discussion include cataracts, retinal detachment, muscle anomalies, glaucoma, uveitis, keratectomies and keratoplasties, pleoptics and macular function testing. There will be surgical demonstrations on TV.

Invitations to attend may be obtained by writing to Mrs. Tamar Weber, registrar, Institute of Ophthalmology of the Americas, 218 Second Avenue, New York 3.

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#### GRANTS TO ROCHESTER LABORATORY

The Eye-Research Laboratory of the University of Rochester School of Medicine and Dentistry has received an unrestricted eye-research grant of \$27,000 from the Rochester Eye-Bank and Research Society, Inc. Funds contributed by the Eye-Bank to the University for eye research now total \$86,600.

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#### 1960 NSPB CONFERENCE

March 30-April 1  
Brown Palace Hotel  
Denver, Colorado

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## CURRENT ARTICLES

**Chronic Simple Glaucoma.** A. L. Schonberg. *Rocky Mountain Medical Journal*, Vol. 56, p. 62. May 1959.

The general practitioner or internist need not concern himself with forms of glaucoma which produce symptoms, since these cases should immediately be referred to an ophthalmologist. The symptomless variety—chronic simple glaucoma—is another matter. The means for identifying this insidious disease are not as yet being utilized by the first line of defense, the general physician.

Since tonometry presents some difficulties to the busy doctor, another means of early diagnosis is suggested. This is meticulous examination of the optic disk with the optimum lens of the ophthalmoscope, and then classifying it in one of four grades, to be filed along with a rough sketch. In this way the doctor can check on any changes during the annual examination of his patient.

Class I is a normal disk, with the least amount of cup, and the vessels appearing to come out centrally from the optic nerve. The next classes show increasing cupping and spreading of the vessels toward the edge of the disk. To be safe, Class III should be referred to the ophthalmologist, and Class IV must be. A patient with a Class V cup is already blind.

**The Medical Drive on Glaucoma and its Implications for Optometry.**

A. E. Hoare. *The Optometric Weekly*, Vol. 50, p. 1049. May 28, 1959.

The author, a California optometrist, comments on the acceleration of the medical program for the early

detection of glaucoma. Because of the importance of preventing blindness, optometrists should recognize their own responsibility for glaucoma detection.

Since glaucoma is a disease it is popularly thought to be the exclusive concern of the medical profession. However, the author believes the optometrist may do his part in the great drive against glaucoma by taking a routine field test in all patients over forty. This is a screening procedure. Diagnosis of the disease is the prerogative of the ophthalmologist.

If routine field testing is to become a real contribution to the drive against glaucoma, optometrists should be thoroughly trained in the new screening methods by postgraduate courses. They must also develop a new attitude, and recognize the need for non-medical means for the prevention of blindness.

**Glaucoma Control: Results of Routine Tonometry in 2,100 Patients.**

M. W. Sloan. *American Journal of Ophthalmology*, Vol. 47, p. 641. May 1959.

The establishment of a diagnosis of glaucoma may take a year or more, but early determination and treatment before positive deterioration occurs means the possibility of control. A study of 2,100 private patients in the glaucoma age group is reported, of whom 77 had intraocular tensions of 26 mm. of mercury or more. To date, glaucoma has been established in 45 cases, ruled out in two, and is still suspected in the remaining 30, all of whom are under observation.

The follow-up in glaucoma is most important. Patients are told to feel free to consult the author whenever they have visual symptoms, and office personnel are instructed to expedite the office calls of these people. Aside from this, a regular schedule of examination is established. Postoperative cases are followed at lengthening intervals up to a year, if conditions warrant. But a glaucoma patient is never dismissed.

**A Review of Data on the Occurrence of Glaucoma.** W. D. Simmons. *American Journal of Ophthalmology*, Vol. 47, No. 5, Part II, p. 62. May 1959.

The author, supervisor of the prevention of blindness project, California State Department of Public Health, presents an extensive survey of the literature relating to glaucoma from the epidemiologic aspect. This is a first step in finding out what sort of people have glaucoma, and whether individuals and population groups with an increased risk of glaucoma can be more precisely identified. The early detection and treatment of the disease would then be easier.

Many possible factors are examined, the author pointing out that numerous studies lack acceptable data to support the conclusions reached. He does not evaluate the studies, but there is a certain weight of evidence confirming widely accepted ideas such as the two per cent incidence of undiscovered glaucoma in this country, the predominance of females over males in both chronic simple and acute types, and maximum incidence in the age group 50 to 60.

Less familiar are a number of studies finding acute attacks more

frequent during the winter, and during turbulent weather, than in the summer and calm periods of weather. While the emotional factors in glaucoma are widely recognized, a Russian study is cited which indicated that intraocular pressure could be decreased by conditioned reflex, a process which Pavlov said was produced within the cortex. In this report, a group of glaucoma patients were given their pilocarpine in association with a ticking metronome. After a time distilled water was substituted for the drug, but the intraocular pressure decreased as before simultaneously with the ticking metronome.

While racial factors were in general discounted there was considerable agreement as to the increased susceptibility of Negroes to glaucoma, which appeared to be connected with the heavy pigmentation of the iris. The genetic factors in the disease were not disputed, and there was no study which went counter to the impression that hyperopes are more prone to glaucoma than myopes.

**Herpes Simplex Keratitis Following Febrile Illnesses.** J. E. Leibold. *United States Armed Forces Medical Journal*, Vol. X, p. 570. May 1959.

Herpes simplex (dendritic) keratitis may develop in association with influenza or even a common cold. Prompt diagnosis is important, for if proper treatment is delayed, severe scarring and vascularization of the cornea may result, with decrease in visual acuity. Five case reports show that two patients who received prompt treatment recovered rapidly and had no sequelae. In the other three, who had been wrongly diagnosed and treated, acuity was greatly impaired.

The symptoms are conjunctival injection, ciliary injection, reduced vision, and often secondary iritis, causing photophobia. In the more advanced cases there are corneal ulcers. These should be cauterized to kill the cells harboring the virus, and the eye atropinized and patched. There is no specific vaccine for herpes simplex. Smallpox vaccine is often used, and while there is no real proof of its value, it is worth trying. Cortisone is contraindicated; it may cause corneal perforation and increased chronicity of the disease.

**Solar Retinitis.** L. P. Agarwal and S. R. K. Malik. *British Journal of Ophthalmology*, Vol. 43. p. 366. June 1959.

The authors, of the All-India Institute of Medical Sciences, New Delhi, report 56 eyes with solar retinitis in 30 patients. Three patients had practised sun-gazing as a misconceived therapeutic measure to strengthen the eyes; the others had observed partial or total eclipses. Damage to the eyes was in direct proportion to length of exposure, seven patients having burns which had produced a macular cyst or hole and gross pigmentary changes. They were not helped by treatment.

**Uveitis in Chronic Systemic Disease.** W. L. Benedict and A. S. Burgess. *Modern Medicine*, Vol. 27, p. 88. May 15, 1959.

Clinicolor illustrations by Annette S. Burgess of Wilmer Institute show eye changes in tuberculosis, brucellosis, histoplasmosis and toxoplasmosis, four of the chronic diseases which may affect the eye, especially the uveal tract. It is estimated that uveitis and its complications may account for

from 15 to 25 per cent of the world's blindness. Other diseases recently recognized as etiologic agents are sarcoidosis, leptospirosis, and various fungus and viral infections.

Nongranulomatous uveitis seems to be related to focal infections, probably through an allergic mechanism. In these cases the patient should be tested for specific hypersensitivity to different strains of streptococcus, and examined for systemic foci of infection.

Granulomatous uveitis cannot be diagnosed as to etiology by an ophthalmologic examination alone. The medical survey should include consultation, blood chemical determinations, serologic and intracutaneous tests for chronic disease, mediastinal and pulmonary x-rays and sometimes lens protein and uveal pigment tests.

**Researches into the Regional Distribution of Eye Disease.** I. Mann. *American Journal of Ophthalmology*, Vol. 47, No. 5, Part II, p. 134. May 1959.

A government survey of diseases of the anterior segment of the eye has covered the Southwest, the Eastern Goldfields and the Kimberley District of Western Australia and the territories of Papua and New Guinea. Further studies of isolated racial and cultural groups should be made while there is still a chance to observe the natural incidence of eye disease.

Nearly 24,000 individuals were examined, living in a wide range of climatic, dietary and social conditions. Trachoma, the only outstanding disease, represented from 60 to 80 per cent of all diseases found in the various areas. It is not indigenous, and is spread by contact in unhygienic conditions. The next commonest disease,



except in Southwest Australia, was pterygium; roughly five or six per cent of those with eye conditions were affected. Marginal blepharitis was fairly common among the whites but did not occur at all in full-blood aboriginals.

Glaucoma was virtually non-existent among the native races; one case was found in the 13,717 persons examined in Papua and New Guinea. Biochemical work is needed to find if there is a correlation with salt and fluid intake, and with sodium-potassium balance. Uveitis appeared rare in both white and native persons. But there was an apparent racial difference in the incidence of strabismus, which was 0.15 per cent among the natives of Papua and New Guinea, and 3.2 per cent among white persons in the Kimberleys.

Congenital anomalies, mostly of quite minor character, were found in 0.8 per cent of the 23,915 persons examined. Among the pigmented races the commonest anomaly was conjunctival melanoma of a type never known to become malignant. The natives were freer than the whites of conjunctival infections, and though 378 cases of trauma were found among the constantly-fighting jungle dwellers of the islands, no case of sympathetic ophthalmitis was discovered.

The questions of nutritional eye disease and of the distribution of bacteria were studied in additional expeditions. During the survey of the four original areas no correlation of diet with any eye disease (except possibly glaucoma and cataract) had been found, and only three cases of nutritional deficiency affecting the eyes were observed in Papua and New Guinea. Reports of starvation among Australian

aboriginals in the central deserts led to an expedition to that area. Though these nomads exist on a feast-and-famine basis, living mostly on game, not one showed any ocular signs of malnutrition. The general medical findings revealed little evidence of undernourishment. Possibly periods of actual starvation are less harmful than a continued unbalanced diet such as that in Asiatic countries. The 438 aboriginals had good visual acuity, and were virtually free from eye diseases, except for trachoma.

The supplementary survey to study bacterial distribution was made in Arnhem Land, where the natives are far removed from civilization. Conjunctival cultures showed an extreme rarity of pathogenic or pyogenic bacteria. This absence of pathogens explains the mildness of trachoma in this region; it is practically self-limiting and free from complications.

**Patients' Acceptance of Corneal Microlenses.** R. A. Westsmith. *American Journal of Ophthalmology*, Vol. 46, p. 869. Dec. 1958.

A survey of persons in the San Francisco area who were fitted with corneal lenses during the last two and a half years showed that 90 per cent had successfully adjusted to them, and 70 per cent were wearing them more than eight hours a day. Of the 613 persons answering the author's questionnaire, only 66 had abandoned their lenses.

It is noteworthy that only one of these 66 persons cited corneal abrasion as the reason for giving up microlenses. The improved lenses rarely cause trauma, and the cornea seems to develop increased resistance to irritation, so that in most cases wearing

time can gradually be lengthened.

Age appeared to have little relation to acceptance. The youngest wearer, a girl of 13, wore her lenses all day every day, and a high percentage of aged people were able to insert and tolerate lenses. High myopes were more tolerant than myopes of lesser degree, but the greater the astigmatism, the less was the tolerance. Men were slightly less apt to accept lenses than women. The longer a person had worn regular glasses the less inclined he was to accept corneal lenses.

Dividing the wearers into groups doing near and distance work, it was found that students, office workers and so forth were more apt to accept lenses than laborers, farmers, housewives and salesmen using their eyes for distance work. The great majority had been fitted for social reasons, and only 121 for medical reasons; their acceptance rate was about the same.

#### **Psychogenic Visual Disturbances.**

J. M. Schneek. *New York State Journal of Medicine*, Vol. 59, p. 2031. May 1959.

Three cases of visual disturbance in eyes found to be normal came to the attention of the author, a psychiatrist. The first, a woman of 52, complained of a persistent veil or film which for two years had made her virtually blind. Psychiatry revealed that she had felt that a barrier separated her from the people around her, and normal vision was restored.

The second patient, whose ophthalmologic findings were normal, had intermittent blurring, which proved to be connected with his struggle to overcome the limitations of his early life, and see himself in a new per-

spective. He too was cured with psychiatric help.

The third patient, unhappy in her marriage, suffered a sudden amblyopia which cleared during a recital of her troubles to the psychiatrist. She refused further help, and a few months later her symptomatology shifted to heart pains, which also proved psychogenic.

The author believes that the film or veil impression may be overlooked by both patient and ophthalmologist if no structural defect is found in routine medical examinations. Some of these patients may need psychiatric evaluation.

**Eye Tests for Children.** E. G. Gill and F. M. Foote. *The Lion*, Vol. 41, p. 22. March 1959.

There is much general confusion about the best method of school vision screening. In many communities there has been so much agitation over the method of vision testing to be used that the goal of the program has been overlooked: getting children who need eye care into the hands of professionally competent persons.

A screening test is only one part of a worth while vision program, which should be the combined work of eye care practitioners, parents, teachers, school principals, school and public health nurses and family physicians. The essential follow-up part of the program is the most often neglected when the vision testing becomes complicated. Thus fewer children actually may receive eye care than when a more simple testing method is used.

The authors recommend that when a local Lions Club or other community group wishes to assist in the school eye health program, they get in touch

with the local director of school health services and offer their help to him.

**Recent Studies of Eye Movements in Reading.** M. A. Tinker. *Psychological Bulletin*, Vol. 54, p. 215. July 1958.

The author evaluates the literature on eye movements in reading from January 1945 to October 1957, and finds that the number of studies is less than in the previous decade, and that the subject has reached the stage of diminishing returns.

Several experiments dealt with the fatigue factor. In one, the subjects read material in print or in microfilm projections for six hours continuously. Eye movements recorded electrically at intervals showed no significant change in the oculomotor patterns. The practical inference is that long periods of reading, under good conditions of lighting and print, do not produce measurable fatigue in high school and college students if their eyes are in fair condition to start with.

**Brightness Contrast, Illumination Intensity and Visual Efficiency.** M. A. Tinker. *American Journal of Optometry*, Vol. 36, p. 221. May 1959.

The effects of lighting upon visual efficiency with variations in brightness contrast between print and paper were tested, using 367 university students. The test materials were printed on white paper and on light, medium and dark grey paper. The paper and ink reflectance was measured and a brightness difference established—roughly two to seven per cent.

With the highest brightness contrast, increases of light intensity above five footcandles had no important effect on the speed of reading. But

with very poor contrast (dark grey paper) the light intensity had to be raised to somewhere between 50 and 100 footcandles to get an important increase in the speed of reading. The findings of this experiment suggest that about 25 footcandles of light is adequate for reading good book print.

Reading is above the threshold of perception, not involving minute examination of words. Visibility (threshold perception) is a different matter from readability, and demands closer examination of the details of the letters in the words. In visibility tests proficiency increased with increased illumination up to 1,000 footcandles. However, even extreme increases in illumination cannot make low-contrast material as visible as material with good contrast between the print and paper. Threshold data such as visual acuity or visibility are not valid guides to the amount of light needed for reading.

**An Analysis of the Causes of Blindness in Florida.** N. S. Rubin. *Journal of the Florida Medical Association*, Vol. 45, p. 527. Nov. 1958.

A report is presented of 3,141 persons approved for Aid to the Blind between 1947-57, including 288 children blind from birth receiving services from the Florida Council for the Blind. This is estimated to represent a fourth of the blind population of the state. The group was composed almost entirely of indigent persons, 73 per cent of whom were males, and 46 per cent Negro. (In the general population of Florida Negroes compose only 21 per cent.)

The Standard Classification of Blindness was used in this analysis. Classed by site and type of affection, the cause

of blindness was cataract in 23 per cent, optic nerve atrophy 20 per cent, glaucoma 15 per cent, retinal affections 12, uveal tract 10 per cent, and corneal disease 7 per cent.

The most frequent single etiology was syphilis (159 cases), and 41 persons had been blinded by ophthalmia neonatorum. Injuries, including chemical burns, accounted for blindness in 224 cases, and four-fifths of the trauma were associated not with industry but with sports, play with pointed objects or airguns, and other injuries. General diseases, including diabetes mellitus, caused 266 cases of blindness, and prenatal etiology 166.

The data show that glaucoma is an increasing source of adult blindness, a challenge to provide early detection and adequate supervision. Cataract is a remediable condition; prevention of infectious diseases and adequate treatment of syphilis, diabetes mellitus and vascular disease are essential. Education of the public in regard to dangerous toys is another need. The incidence of blindness in Florida could be reduced by two-thirds.

**The Expected Visual Acuity.** N. Verney. *The Optician* (London), Vol. 136, p. 377. Oct. 24, 1958.

The influence of various factors on visual acuity was studied in 3,000 healthy eyes. The subjects, 666 men and 834 women, ranged in age from 18 to 76 years. All findings were made monocularly, and no eyes with worse than 20/30 corrected vision were included. The investigation was made in Brisbane, Australia.

In the author's opinion acuity should be brought up to a full 20/20 or preferably 20/17. In his tests 62 per cent of the men and 55 per cent of the

women attained 20/17 corrected vision, 35 per cent of the men and 42 per cent of the women reached 20/20, and 3 per cent of both sexes could be corrected to 20/30 or better. Nearly a fifth of the subjects were hyperopic, and they enjoyed better acuity than the myopes, who constituted less than five per cent of the series.

The results showed that persons who had not previously worn a correction attained a higher visual acuity than those who had worn spectacles for some time. Subjects with medium-sized pupils had better acuity than those with small or large pupils. Eye color seemed to correlate with good vision; more blue eyes than brown had 20/17 vision.

**Twenty-Year Study of Physiological Measurements in One Hundred Senior Airline Pilots.** G. J. Kidera. *Journal of the American Medical Association*, Vol. 168, p. 1188. Nov. 1, 1958.

At the initiation of this study of commercial airline pilots in 1937, their ages ranged from 25 to 39 years, with an average of 30. During the next 20 years these men were periodically examined by the same group of company doctors. By 1957, when the age range was 45 to 59 years, the pilots were found remarkably homeostatic, with no sign of occupational predilection for any particular health problems.

However, 91 of the 100 pilots needed presbyopic correction by 1957 at an average age of 44 years, though 20 years before all had a near vision of 1 on the Jaeger system. In 1937 all had distance vision of 20/20 or better in each eye; by 1957, 20 pilots needed glasses to bring their vision up to 20/20. The poorest vision was 20/50 for the right eye and 20/67 for the

left. Depth perception was little changed in the 20-year period.

***Biotypology of the Myopic Man.***

A. Benoit. *Archives d'Ophthalmologie*, Vol. 18, p. 734. Oct.-Nov. 1958.

A theory that modern man is developing into a taller, slighter and myopic type is expressed after an analysis of the medical records of 38,670 recruits of the Third Military Region of France. This was a homogeneous group of young men all born during 1937, and most of them from the same settled and largely agricultural region.

Of the 1,548 rejectees there were 294 myopes (13 per cent). The 37,122 enlisted men included 1,217 myopes (3 per cent), the great majority (about 87 per cent) having a mild type of less than six diopters.

***Problems of Corticogenic Vision: A False Hope for the Blind.*** T. Shipley. *American Journal of Ophthalmology*, Vol. 47, p. 358. March 1959.

Recent reports that electrical stimulation of the brain can cause a blind person to see are discounted by the author, a research psychologist. Visual experiences, the stimuli of which lie directly in the cerebrum, can be produced experimentally, and they differ, depending on what part of the brain is stimulated. Electric stimulation of the temporal cortex of the nondominant side of the body often results in complex hallucinations, including visual, auditory and other sensory components. But a typical blind or near-blind person cannot be helped to "see" by such stimulation. It may help him to hallucinate, to recall vividly something seen in the past, but this is all.

Stimulation of other areas of the

brain will have different results. When the back of the head near the occipital cortex is jarred, all of us "see stars." When the occipital cortex is electrically stimulated in Brodmann's area 17, all individuals may experience vague flashes, flickering lights, colors, stars, wheels, clouds of light—a great variety of sensations. These may be called cortical phosphenes or photopsias. (A retinal pressure phosphene may be produced when a person with an intact retina closes his eyes and presses down firmly on his eyelids.) Duke-Elder comments that this area B-17 gives rise to simpler phenomena, true phosphenes, while B-18 and B-19 may react with actual hallucinations.

Almost nothing is known about corticogenic phosphenes in blind persons. In many cases of blindness, the brain itself is fully intact, and even in cases of extensive brain-damage, rudimentary aspects of vision may remain. Thus the hope periodically arises that corticogenic vision may be found useful.

However, in no case have two or more phosphenes been seen simultaneously. It is estimated that something like 100,000 cortical cells must be functioning to enable us to perceive visual forms. It is clearly impossible to insert that number of electrodes in the brain. But some work in this area was reported in 1957 by Dr. John C. Button, an osteopath, and the popular newspapers and magazines have since spread a great number of glaring misconceptions about his experiments. Several electrodes were implanted in the occipital cortex of a woman totally blind for 18 years. She experienced a typical corticogenic phosphene resembling those in sighted subjects. All that this proved was that her cortex

had not entirely ceased to function, although it was probably not functioning normally. In many cases of total blindness hallucinations and photopsias have been reported; severing the optic nerve in persons long blind almost always gives rise to flashes of light.

It is not new in medical records that sight may be regained after blindness, for instance, through belated cataract operations. But false implications have been drawn from Button's experiment. He wired a photocell to the electrodes, and the patient held this photocell and moved it about. Only when she turned it toward the light did she experience the phosphene. This does not mean she "saw" the light. If instead of a photocell she had held a thermocouple in her hand she would have "seen" the heat of a radiator; with a microphone she would have "seen" words spoken.

Only a differential response to two lights would hold hope for a visual aid; a dim hope at best. Work in this area must proceed with extreme scientific caution.

**An Isopter in the Intermediate Field of Vision.** M. Chamlin. *AMA Archives of Ophthalmology*, Vol. 61, p. 608. April 1959.

The intermediate field of vision, lying between the inner limits of the clinically useful peripheral isopter and the outer limits of the clinically useful central isopter, may be the site of early field defects in glaucoma and other diseases. New equipment was devised to study this zone, extending to 48 degrees temporally, 34 degrees nasally, 31 degrees above and 32 below. A large concave bowl lined with black felt and a white test object of 1.3 mm. were used.

The 63 subjects were recruited from the personnel of Montefiore Hospital, New York. The average age was 27 years, and all had normal vision with correction. Twelve meridians were established in each eye of the subjects, and the average reading for each meridian of each eye was determined. The difference between the averages for right and left eyes was very small, less than one-half inch, and these averages were computed to determine the isopter.

There is disagreement as to whether the earliest field changes in certain diseases occur in the central or the peripheral field. It is possible that glaucoma and some prechiasmal tumors may first show defects in this intermediate zone, for which a clinically useful isopter has now been determined.

This study was supported in part by a grant from the National Society for the Prevention of Blindness.

**Evaluation of a Screening Procedure in the Detection of Eye Disease.**

V. Cassidy and W. H. Havener. *AMA Archives of Ophthalmology*, Vol. 61, p. 589. April 1959.

The Harrington - Flocks multiple pattern screener was used to test 1,536 persons, most of them patients in the Ohio State University Ophthalmology Clinic, with a great variety of eye and general diseases. Findings were confirmed by the usual methods. There were 202 patients showing field abnormalities by both screener and perimeter; the two methods corresponded closely in mapping defects.

In using the screener on this series, whose ages ranged from five to 88, the authors found the older patients slow and often confused; they made up the



majority of the false positives and false negatives. Children responded rapidly, and the test was successful in those as young as five years. Visual acuity did not seem to influence results, and many patients with vision as poor as 5/200 responded rapidly. The usual screening time was less than five minutes.

Of the 1,536 persons tested, 1,260 (82 per cent) had no field defects; nine were too equivocal to classify; 39 were false positives, and 26 were false negatives. Among the 228 abnormal fields which should have been detected by the screener, only 11.5 per cent were missed. The screener was remarkably effective if the field defects were pronounced, but not when they were slight, as in early stages of chronic simple glaucoma. It missed 8 out of 37 glaucoma patients. The authors are convinced that tonometry is the best single screening test for glaucoma.

The false-positive group of 39 patients were mostly over 50 years of age, and most of them had some type of eye disease (unoperated cataract, aphakia, refractive error, etc.) but not proven perimetric abnormalities. In the false-negative group of 26 patients, also mostly over 50 years of age, the types of field defect missed were glaucoma (eight), chorioretinitis (eight), early senile macular degeneration (three), hysteria (three), and neurologic disease (four). These missed defects were all quite small, but the authors emphasize that the screener is no substitute for accurate perimetry in evaluating early cases of field loss.

The remarkable value of reduced visual acuity as a screening test is stressed. Vision reduced to 20/40 or less in the worse eye was found in 85 per cent of the patients with peri-

metric defects, 52 per cent of the false-negative screener patients, and 24 per cent of the total 1,536 patients.

**Rehabilitation of Some Visually Handicapped Patients.** A. E. Braley, P. J. Leinfelder, E. C. Ferguson and F. C. Blodi. *Journal of Iowa State Medical Society*, Vol. 49, p. 209. April 1959.

Patients with cataracts, corneal diseases and detached retinas are the chief groups whose vision can be surgically restored. The removal of cataracts in children and young people is especially important to prevent their going through life as handicapped individuals. In the last few years the State University of Iowa Department of Ophthalmology has performed 91 corneal transplants, of which 60 were successful. (The minimum period of follow-up is not reported.) In money terms alone this means a saving to the nation of \$60,000 a year by the transformation of dependents into income-earning citizens.

Especially gratifying is the advance in surgery for retinal detachment, which once meant a doomed eye. With the scleral buckling procedures the volume of the eye is permanently reduced, the period of hospitalization is shortened, and the patient in most cases regains and keeps useful vision.

There remains glaucoma, one of the most dangerous ocular diseases, which cannot be cured, but can be arrested.

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NSPB CATALOGUE—Single copies of the National Society's Catalogue of Publications are free on request. (No. 32) Address 1790 Broadway, New York 19.

## BOOKS AND PAMPHLETS

**SYSTEM OF OPHTHALMOLOGY. VOL. I: THE EYE IN EVOLUTION.** Sir Stewart Duke-Elder. The C. V. Mosby Co., St. Louis. 1958. 843 p. \$27.50.

Because of the rapid and profound changes in the science of ophthalmology since the appearance of Duke-Elder's *Text-Book* in 1934, the original seven volumes will be expanded to fifteen, under a new title. This tremendous task will be shared by Sir Stewart's colleagues at the Institute of Ophthalmology in London.

The first volume, however, is entirely his own work, and one that only the acknowledged authority on the eye could have written. It is fortunate that nobody had attempted to write the history of the eye before now, because the subject deserves nothing less than the classic Sir Stewart has given us. *The Eye in Evolution* is an event in scientific writing, but like the *Origin of Species* of just a century earlier, it has also a strong general appeal. This is due to Sir Stewart's great gifts as a writer, to his infectious delight in his material, and also to the fact that the history of the eye turns out to be a marvelous way to consider evolution and the complexities of nature as a whole.

"We begin," Sir Stewart writes, "with a drop of viscid protoplasm the reactions of which we do not understand, and we end lost in the delicacy of the structure of the eye and the intricacies of the ten thousand million cells of the human brain." A few sentences later: ". . . neither in fact nor in fiction does a story more fascinating unfold. . . . Nor is there a story more important."

In the course of the book Sir Stewart makes the reader feel the fascination and the importance of his subject. The first section, "The Effect of Light on Living Organisms" traces the effect on metabolism, movement and pigmentation, and brings us to the emergence of vision. Some of the marvels of nature come in this section; for one, the navigational sense in birds, "an innate ability to estimate the sun's arc by observation of its movement over a small distance and, by extrapolation, to navigate automatically over great distances with extreme accuracy" even when flying at night. Another light-compass reaction is the "dancing" of bees in certain definite patterns to signal to other bees the direction, distance, and richness of a discovery of nectar.

The second section deals with the evolution of the eye, from a cell sensitive to light and able to transmit a physiological impulse through the myriad forms nature has devised. Since vision is one of the latest senses to be evolved, most of the animal kingdom is not primarily visual and depends on older senses. The third section, on function, takes us again through the vast sweep of evolution to the primates. The intricacies of human vision will require the next 14 volumes of *System of Ophthalmology*.

Meanwhile, volume one can stand alone as an extraordinarily rich and instructive contribution to the world's bookshelf. For the student the many drawings and photographs, the bibliographies, glossaries and paleontological tables point up a text which illuminates a vast and fascinating world.

**THE TRUTH ABOUT YOUR EYES.** Derrick Vail, M.D. Farrar, Straus and Cudahy, Inc., New York. 1959. 180 p. \$3.50.

A second edition of this popular text is indeed welcome. So much faddist literature on eyes has flooded the country in the past few years that a sound and simple presentation of up-to-date medical information for the layman is badly needed.

Ignorance of eye function and the things that may go wrong with sight is widespread. This little book corrects many misconceptions and provides a wealth of information that the average person should have. Facts about wearing or not wearing glasses are given in detail; parents are advised on many problems relating to children's vision, particularly cross-eye, which should have prompt attention if the condition is noted after the age of six months.

Teachers, nurses, social workers and personnel engaged in prevention of blindness activities will find the text valuable, and it is recommended as required reading for high school students.

Dr. Vail is head of the department of ophthalmology at Northwestern University Medical School, and is editor-in-chief of the *American Journal of Ophthalmology*. He is a member of the board of editors of *Sight-Saving Review*.

**SQUINT AND ALLIED CONDITIONS.** George P. Guibor, M.D. Grune & Stratton, New York. 1959. 356 p. \$11.50.

Study of over 41,500 patients during 25 years of experience has enabled Dr. Guibor to write a helpful book on the diagnosis and treatment of ocular motor defects. Convinced that many difficulties and mistakes in treatment stem from faulty diagnoses, his chief

aim is to simplify diagnostic procedures for everyday use.

In treatment, too, the author advocates simple methods which he admits are controversial, but which he has used with success. The use of atropine in the fixing eye, and of bifocals and ophthalmic prisms in prescriptions, are correctives which he advocates, if used properly for correctly diagnosed cases. Children who cannot adjust to occlusion, or who neglect home exercises in fusion, can often be cured by an atropine-prism therapy, in Dr. Guibor's experience.

There are detailed discussions of amblyopia, anomalous correspondence, the influence of hyperopia and myopia on vision and motor ability of the eyes, occlusion and fusion training. The last chapter describes Dr. Guibor's own surgical procedures.

**HEALTH STATISTICS:** From the U. S. National Health Survey. Impairments by Type, Sex, and Age, United States July 1957-June 1958. U. S. Department of Health, Education, and Welfare, Washington, D. C. 1959. 28 pages. 25 cents.

This pamphlet is one of a series of publications coming from the U. S. National Health Survey authorized by Public Law 652, 84th Congress. The data are based on interviews during July 1957 to June 1958. The interviews were conducted in approximately 36,000 households comprising 115,000 persons.

In the past when questions were asked as part of the United States Census it was found that such a method of interviewing was highly unreliable in gaining any idea of the prevalence of blindness. Results from the various states were so bizarre that

this method of inquiry was dropped prior to the 1930 census.

In this new survey for reasons not stated the authors chose as the definition of blindness "(a) if he was 6 years old or older and a negative answer was given to the question: 'Can you read ordinary newspaper print with glasses?' or (b) he was under 6 years of age (or was over 6 but had never learned to read) and was reported as blind." Based on this definition and the responses of those interviewed, the Division of Public Health Methods of the Public Health Service gives a rate for blindness of 5.7 per 1,000 persons. This rate is far higher than that obtained by the careful studies of Ralph G. Hurlin, Ph.D., for many years chairman of the Committee on Statistics of the Blind sponsored by the American Foundation for the Blind and the National Society. Hurlin's estimate in 1952 was 1.98 per 1,000.

The criterion of visual acuity used in this National Health Survey was equal to a visual angle of 2.4 minutes, according to a report approved by the section on ophthalmology of the American Medical Association, which appeared in the A.M.A. *Archives of Ophthalmology*, volume 54, page 462, September 1955.

The usual criterion of blindness in the United States used by the Treasury Department in connection with income tax returns, by the Social Security Administration in connection with public assistance for the blind, by the Office of Vocational Rehabilitation and by the Office of Education, is 20/200 which is equivalent to a visual angle of 10 minutes.

In view of the great discrepancy

between this definition and the scientific criterion for blindness which is generally accepted, this report can only create confusion as to the probable prevalence of blindness, in connection with which it is the opinion of this reviewer that Dr. Hurlin's 1952 study is still the best estimate available.

**GLAUCOMA: TRANSACTIONS OF THE THIRD CONFERENCE**, January 1958. Edited by Frank Newell, M.D. Josiah Macy, Jr. Foundation, New York. 1959. 272 p. \$5.25.

The 24 ophthalmologists and other scientists participating in the third three-day conference on glaucoma sponsored by the Josiah Macy, Junior Foundation seemed far more at ease with one another, judging from the frequent group interchange recorded in this volume.

The two sections on "Osmotic Factors in the Formation of Aqueous Humor" and "Consensual Changes in Intraocular Pressure Under Experimental Conditions" will be of interest largely to those concerned with keeping up to date with the contribution of basic research in glaucoma.

The remaining two sections of 134 pages dealing with electric tonography, however, should be of interest to public health workers as well as physicians interested in the early diagnosis of a condition causing 14 per cent of all blindness in the United States. Here Morton Grant, a pioneer in this method of continuous electric recording of changes in pressure within the eye over a four-minute period, describes the historical and experimental background for our knowledge about determining the rate of outflow of the aqueous. Winston Roberts and other

clinicians discuss the merits of this technique in diagnosing chronic simple glaucoma in borderline cases.

A table of Roberts on 132 proved cases of glaucoma showed 73 were given a complete glaucoma work-up because of the clue of increased pressure alone, 27 on the basis of history, only 5 on the basis of changes in optic disc or field of vision, 24 on combined pressure and history, and 3 on history plus discs or visual fields. One may conclude, therefore, that glaucoma surveys being sponsored by state and local health departments are wise in placing emphasis on the taking of intraocular pressure, despite the numbers of false negatives and false positives which inevitably result.

**A HISTORY OF OPHTHALMOLOGY.** George E. Arrington, Jr., M.D. MD Publications, New York. 1959. 174 p. \$4.00.

Tracing the history of medicine as related to the eye from 4500 B.C. when the shadowy figure of Imhotep, the first known physician, appeared, down to the present day might require volumes. This monograph attempts only to present the main features of that evolution as it correlated with the general cultural advance. The author's intention, stated in the preface, is "to emphasize the position of the physician as *primarily* a scholar and student of man rather than as a technician."

Dr. Arrington, a clinical and research ophthalmologist of Richmond, Virginia, believes that today's American doctor is shifting from over-emphasis on technology and "the machinery that turns out cures" to a broader and more humanistic attitude. Medical history helps him to understand and recover the older, broader

concepts. Thus Leonardo da Vinci, Galileo and Descartes as giants of thought created ages in which mankind could progress. This is vastly more important than their specific contributions to ophthalmology.

This broad treatment makes the monograph easy and interesting reading for the general reader. A chart of the great pioneers of ophthalmology, their contributions and their historical correlations, is a useful epitome, and a bibliography is supplied for those who want to explore further in a fascinating field.

**LEXICON OPHTHALMOLOGICUM:** Multilingual Ophthalmological Dictionary. Editors: M. E. Alvaro, Marc Amsler, H. Arruga, G. B. Bietti and Stewart Duke-Elder. S. Karger, New York and Basel. 1959. 224 p. \$8.50.

In his introduction to this unique dictionary Sir Stewart Duke-Elder comments on the immense burden thrown upon the scientist who must have a working knowledge to read, if not to speak, five languages if he is to keep up with world literature in his subject. This "curse of Babel," he explains, has led the International Council of Ophthalmology to sponsor the preparation of a multilingual dictionary.

Designed to help the ophthalmologist read, and perhaps write, in languages other than his own it provides him with translations of technical words commonly used in his specialty. English, French, German, Spanish and Italian are included; also Latin, since it so often provides a common root, and may serve as a guide in interpreting technical terms in other less widely used tongues.

The terms are listed compactly in the various sections so that cross-references are easy; the type arrangement is especially clear and pleasing.

**EDUCATIONAL READING GUIDE FOR THE PARTIALLY SEEING.** Lorraine Galisdorfer. Foster & Stewart Publishing Corp., Buffalo, N. Y. 1951-59. 83 p. \$3.00.

The compiler of this useful guide is a teacher of partially seeing children in Kenmore, New York. She has gone to great pains to find among the immense number of juvenile books currently available those which can be read by visually-handicapped children. The factors in choice have been worth while content, non-glossy paper, ample spacing between lines, words and letters; clear pictures, and large type. In each reference the size of type has been indicated as "very large" (approximately 18-point bold Caslon) or "oversize," in most instances meaning 24-point bold Caslon type.

Each book is briefly described as to content, and the grade is indicated for textbooks. The range of texts is from kindergarten through the tenth grade. Besides story books the list includes language and spelling books, basic readers, and volumes on social studies, science, arithmetic, health and safety.

**EYE EAR NOSE AND THROAT MANUAL FOR NURSES.** Roy H. Parkinson, M.D. C. V. Mosby Co., St. Louis, Mo. 1959. 237 p. \$3.85.

This eighth edition of a work first published in 1925 is a well-organized learning text for nurses, as well as a reference manual. The first chapters are concerned with the structure, physiology, and diseases of each organ, and they are followed by discussions of

operating room technique. A third section deals with special problems likely to be met by the public health nurse in this field.

The eye occupies the largest portion of the work. The chapters on anatomy, physiology, and various diseases are clearly presented and provide a good basis for further learning and application.

In connection with operating room technique a list of surgical instruments needed in each operation should be useful as a ready reference. This section is generously illustrated.

To assist learning and retention, there are quizzes at the end of each chapter on fundamentals. The author does not intend that the nurse shall be given a thorough course, so that she will be able to diagnose or prescribe treatment; but rather that she shall have a general idea of what is to be encountered in these specialties, and be able to follow the physician's directions.

**NURSING CARE OF PATIENTS WITH EYE, EAR, NOSE, AND THROAT DISORDERS.** Mary Estelle Shepard, R.N. The Macmillan Company, New York. 1958. 266 p. \$4.00.

The author, a nurse and a nursing educator, employs skillful pedagogical style to present material designed to be useful in nursing practice. The discussion of the eye occupies a little less than one half the text. She introduces her subject, as good teachers do, by dramatizing its significance. "When the lights go out suddenly in a thunderstorm . . . the immediate reaction is likely to be a feeling of helplessness because we cannot see."

Since during the nurse's undergraduate training period the time allotted



to specialized nursing techniques is necessarily limited she must often learn them through experience. This text should prove useful both in training and practice. Various chapters in the eye care section deal with anatomy, hospital care, treatments and medications in common use, injuries and infections, certain eye disorders, and the role of the nurse as an eye-conscious citizen.

A glossary and other useful appendices are included. The typography is excellent.

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### PITTSBURGH'S SUMMER COURSE

The first comprehensive education program for teachers of partially seeing children ever offered in Pennsylvania was given last summer at the University of Pittsburgh. It was presented by the department of special education of the University's School of Education in cooperation with the National Society for the Prevention of Blindness.

The teachers attending the institute received training in the procedures of educating partially seeing children in elementary, junior and senior high schools and in the organization and administration of related facilities.

Three courses were presented: a seminar on the organization and administration of special classes; a course on the anatomy, physiology and hygiene of the eye; and a course on the education of partially seeing children. The faculty and special lecturers were drawn from local, state and national authorities on sight problems. In addition to Dr. Jack W. Birch, director of the University's department of special education, they included Dr. Franklin M. Foote, former NSPB executive

director, Helen Gibbons, NSPB consultant in education, and others experienced in this field.

The University of Pittsburgh is one of six colleges and universities in the United States which last summer offered courses meeting the National Society's recommendations for the preparation of such personnel.

The five others were Illinois State Normal University, Normal; George Peabody College for Teachers, Nashville, Tennessee; San Francisco State College, California; Syracuse University, New York; and Wayne State University, Detroit, Michigan.

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### CONAN DOYLE, EYE SPECIALIST

Sir Arthur Conan Doyle, whose centenary is celebrated this year, took a brief flyer in ophthalmology before he devoted himself to writing, says a memoir in the *British Medical Journal* of May 23. His medical training in his native Edinburgh was followed by eight years of practice in Southsea, where he was not a shining success. He left early in 1891 to take a few weeks of training in ophthalmology in Vienna, and on his return settled in London. "I waited in the consulting room and no one waited in the waiting room." Thus he described his career as ophthalmologist, which lasted two months.

While he waited he was writing *The Adventures of Sherlock Holmes*, and the detective soon eclipsed the doctor.

---

### SLOGAN FOR EYE BANK

"No one really dies who gives his eyes" is the striking slogan on a leaflet issued by the Delta Gamma Alumnae of Denver, Colorado. Answers to the questions usually asked about eye banks are given on the inside pages, with the address of the Colorado Chapter of the National Society, which acts for the local eye bank. The leaflet is a model in all respects.

# OPHTHALMOLOGY

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Number 4

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